MC0153

Health
Building Note 40
Volume 3

Health Building Note 40

Volume 3: Staff areas

Common activity spaces

NHS Estates
An Executive Agency of the Department of Health

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Volume 3: Staff areas

Common activity spaces

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About this publication

The Health Building Note (HBN) series is intended to give advice on the briefing and design implications of Departmental policy.

These Notes are prepared in consultation with representatives of the National Health Service and appropriate professional bodies.

Health Building Notes are aimed at multidisciplinary teams engaged in:

- designing new buildings;
- adapting or extending existing buildings.

Throughout the series, particular attention is paid to the relationship between the design of a given department and its subsequent management. Since this equation adopted will have important implications for capital and running costs, alternative solutions are sometimes proposed.

The intention is to give the reader informed guidance on which to base design decisions.

Health Building Note 40

The volumes identified by the general title 'Common activity spaces' bring together guidance on spaces that frequently occur in common form in health buildings. Other Health Building Notes, dealing with specific departments, refer to the Common activity spaces HBN for guidance on these commonly occurring spaces.

Acknowledgements

The Royal National Institute for the Blind

Access Committee for England
(Extract from HBN 40, Volume 4, 1988/9)

Contents

About this publication

1. Scope of Health Building Note 40, Volume 3 *page 3*
Introduction
Capital Investment Manual
Cost Allowance
Equipment
Works Guidance Index

2. Design and functional considerations *page 5*
Introduction
Disabled people
Statutory and other requirements
Privacy
Fire precautions
Upgrading, extending or adapting existing buildings
Building components
Maintenance and cleaning
Damage in health buildings
Signposting
External environment – parking areas and courtyards
Circulation spaces
Doors
Windows
Natural and artificial lighting
Internal spaces
Ventilation
Flooring
Fittings
Information technology
Security
Portering
Smoking

3. Critical dimensions *page 11*
Introduction
Component dimensions
Activity dimensions
Examples

4. Engineering services *page 13*

5. Cost information *page 14*
Introduction
Works cost
Functional units
Dimensions and areas
Circulation areas
Communication routes
Engineering services

6. Example layouts *page 16*

6.1 Reception area *page 16*

6.2 Staff base – Ward *page 18*

6.3 Pantry *page 21*

6.4 Utility spaces and disposal *page 22*
Clean utility – In-patient
Dirty utility – General
Disposal room

6.5 Cleaning spaces *page 25*
Cleaning space – General
Cleaning space – Team/heavy duty

6.6 Interview room/Relatives' accommodation *page 28*

6.7 Seminar room *page 28*

6.8 Offices *page 30*
Office 1 – General
Office 2 – Senior staff
Office 3 – All Disciplines
Office 4 – Medical, Doctor's office
Office 5 – Medical, Head of Division
Office 6 – Medical, 2 Senior staff
Office 7 – Interview/Overnight stay

6.9 Toilets *page 32*
Toilet 1, Fully ambulant, with basin
Toilet 2, Ambulant, semi- and assisted ambulant – frontal access
Toilet 3, Ambulant, semi- and assisted ambulant – lateral access
Toilet 4, Independent wheelchair users, with basin
Toilet 5, Independent and assisted wheelchair users, with basin

6.10 Showers *page 40*
Shower 4, Ambulant staff users

6.11 Components *page 42*
X-ray illuminator
Desk 2, single pedestal (1200 x 700)
Chair 1, upright
Chair 4, semi-easy, low-back
Filing Cabinet 1, 2-, 3- or 4-drawer
Filing Cabinet 2, 3 or 5 rails laterally suspended
Shelving 1, racking, 200-300 deep
Shelving 2, racking, 450-600 deep
Shelving 3, open, 200 deep (wheelchair users)
Worktop bench 1
Worktop bench 2

Worktop bench 3, Independent and assisted wheelchair users
Cupboard 1, Small, wall-mounted
Cupboard 2, Small, wall-mounted
Cupboard 3, Wall-mounted, wheelchair users
Cupboard 4, Low-level
Drawers 1, Independent wheelchair users
Screen/Board 1
Screen/Board 2
Person 8, Dressing/undressing
Changing 2, seat and clothes hooks
Locker 1, small luggage
Locker 2, staff
Switches and Sockets, wall-mounted
Suction Cleaner, cylinder-type
Scrubber/Polisher
Bucket Trolley, Double, with wringer
Basin 5, Medium; clinical washing (staff users)
Sack Holder 1, Large, mobile
Sink 4, Stainless steel, single with draining-board

Appendix 1 Healthcare premises: checklist of access and facilities for disabled people *page 75*

Appendix 2 References *page 77*

Appendix 3 Further reading *page 80*

Appendix 4 Activity Data *page 81*

Appendix 5 Index of Data Sheets in other volumes of HBN 40 *page 82*

Other publications in this series *page 85*

About NHS Estates

1.0 Scope of Health Building Note 40, Volume 3

Introduction

1.1 This document is the third volume of Health Building Note 40, 'Common activity spaces' which provides guidance on activity spaces frequently occurring in common form in health buildings. The previous issues of HBN 40 were Volumes 1 and 2 in February 1985, and Volumes 3 and 4 in 1988. All four volumes of HBN 40 have now been restructured and updated to reflect the latest thinking on common activity spaces in health buildings and to provide guidance on access provisions for disabled people to these buildings.

1.2 Volume 1 (Public areas) provides detailed ergonomic data on a variety of public spaces, and is related to information in Activity Data Sheets specifically prepared to complement that volume. It aims to provide the essential information with which the designer may produce the most effective and efficient solution for a particular project.

1.3 Volume 2 (Treatment areas) provides detailed ergonomic data on a variety of clinical and sanitary spaces and associated components, and is related to information in Activity Data sheets specifically prepared to complement that volume.

1.4 This volume – Volume 3 (Staff areas) – provides detailed ergonomic data on a variety of administrative and support spaces and associated components, and is related to information in Activity Data Sheets specifically prepared to complement this volume.

1.5 Volume 4 (Circulation areas) deals with internal horizontal and vertical hospital circulation and communication spaces (that is, corridors, lifts and stairs). It provides guidance on the planning and design of traffic routes both within and between hospital departments. Particular emphasis is given to the space requirements for the movement of people, goods and equipment.

1.6 This guidance relates space provision to the functions of an activity space, having regard at all times to the need for economy. Where design teams use this information to determine space layouts and sizes, the need for economy should always be a prime consideration so that maximum advantage can be obtained from the departmental cost allowance. Activities should be carefully considered so that space can be shared for similar activities or for activities which take place at different times.

1.7 Where a common activity space occurs in the building note for a department, there will be no detailed description of that space, but instead there will be a cross-reference to that building note. Where there are special departmental requirements which warrant a variation from the common form of the activity space, appropriate information is provided in the relevant building note.

1.8 In the text of this volume, documents are mainly referred to by their title only. Full details of these documents are included in the 'References', which constitute Appendix 2 of this volume.

1.9 Details of other relevant publications, research and associated material which may be of interest for further reading are contained in Appendix 3 of this volume.

Capital Investment Manual

1.10 The Capital Investment Manual (England and Wales; in Scotland see 'Health Building Procurement in Scotland') contains the NHS Executive's procedural framework governing the inception, planning, processing and control of individual health building schemes. Although there are various mandatory requirements within the overall process, the individual NHS trusts are, in the main, granted a certain degree of flexibility in the manner in which these tasks are to be carried out; however, approval from the NHS Executive for business cases will depend on how the trusts intend to carry out the mandatory tasks. The Manual gives guidance on the technical considerations of the full capital appraisal process, while also providing a framework for establishing management arrangements to ensure that the benefits of every investment are identified, realised and evaluated. It emphasises three key points:

- each individual scheme must be supported by a sound business case. A business case must convincingly demonstrate (by means of an option appraisal) that the investment is economically sound and financially viable (that is, affordable to the trust and its purchasers);
- an exploration of private finance alternatives should be viewed as a standard option whenever a capital investment scheme is being considered. Once the Outline Business Case has been approved, the preferred option should be compared to potential private finance alternatives. Approval to the Full Business Case will not be given unless there is a clear demonstration that private finance alternatives have been adequately explored;

- the delivery of a major capital project is a difficult and complex task. Nevertheless, any failure to deliver on time and to cost will divert resources from direct patient care. The establishment of an appropriate project control/monitoring system and organisation is essential, in order to ensure that projects are delivered within the agreed budgets and timescales.

Cost Allowance

1.11 The DCAGs (Departmental Cost Allowances Guides) associated with Volumes 1 to 3 of this Health Building Note are promulgated in 'Quarterly Briefing' (issued separately under cover of an Estate Policy Letter) on behalf of NHS Estates.

Equipment

1.12 The equipment used in the areas covered by this volume (that is, the staff areas of a health building) can be categorised into four groups, as follows:

Group 1: items (including engineering terminal outlets) which are supplied and fixed within the terms of the building contract;

Group 2: items which have specific requirements with regard to space and/or building construction and/or engineering services and are fixed within the terms of the building contract but supplied under arrangements separate from the building contract;

Group 3: as Group 2, but supplied and fixed (or placed in position) under arrangements separate from the building contract;

Group 4: items which are supplied under arrangements separate from the building contract, possibly with storage implications but otherwise having no effect on the requirements for space or engineering services.

Works Guidance Index

1.13 The guidance contained in this volume is current at the time of publication. (Specific issues, such as arrangements for dealing with fire, security, energy conservation, etc., are covered by other published documents, which must also be taken into account.) Some aspects of this guidance may from time to time be amended or qualified. Project teams should check the current edition of the Works Guidance Index. Because the Index is published annually, project teams should ensure that they are using the current edition; and should contact NHS Estates Library should the need arise to check any items.

2.0 Design and functional considerations

Introduction

2.1 The guidance in this document is intended to enable health buildings to be designed which are accessible, safe and usable by all potential categories of user; these will include children, an increasing number of elderly people, also patients and visitors who have mobility, sensory and dexterity impairments, and staff. (It must be stressed that health care buildings are places of work for people with disabilities.) These physical limitations impose special demands on the internal and external design of health buildings. Specific considerations include the following.

Disabled people

2.2 Identifying and understanding the conditions which constitute barriers to those with a disability (this category includes, besides the wheelchair-bound, those who for any reason have difficulty in walking, also those with a sensory – that is, visual or hearing – impairment) is a fundamental requirement for the effective provision of accommodation and facilities to be used by disabled people. It is advisable to consult with all groups of potential users of the building (including people with disabilities and staff from all departments) at the early planning stage.

2.3 If the needs of people who have temporary or permanent disabilities are taken into consideration, the resulting design can make the building easier and safer to use for those with children, those using wheeled equipment and those carrying other items. The principle of applying critical criteria should be used – for example, where space is a consideration, wheelchairs or other larger wheeled items need to be considered; for vertical fixtures or fittings the shorter person and wheelchair user must be considered; and for wayfinding, those with visual and hearing impairments must be considered. The resulting design will help not only people who are ill or disabled but also those who are suffering from shock or stress, as many users of health buildings are. Building design which gives consideration to all users will also be easier and safer to use during an emergency evacuation.

2.4 The best design philosophy is to consider the journey through the health building from start to finish, analysing all the related components of the task (negotiating entrances, corridors, lifts, reception areas, toilets, etc.) to ensure that the features, equipment and fittings encountered in completing the journey are suitably designed so that the overall task can be completed easily and conveniently, bearing in mind the different requirements of staff, patients and visitors with varying degrees of functional mobility. In this way building users will be more independent (less reliant upon staff) and consequently less stressed, anxious and frustrated.

2.5 People with disabilities can be defined as those who, as a consequence of an impairment, may be restricted or inconvenienced in their access to, and use of, buildings because of the physical barriers, such as doors which are too narrow, or flights of steps, or unsuitable facilities (such as inadequate lighting, or lack of handrails on staircases or grabrails in toilets). Some people will be temporarily disabled as a result of their need for hospital treatment.

2.6 The following categories of building user are generally recognised:

a. **fully-ambulant:** persons who are fully physically capable of carrying out all activities necessary to their role or function;

b. **semi-ambulant:** persons who walk with difficulty or are otherwise insecure, as a result of a temporary or permanent impairment of the lower limbs. They may walk with or without a walking aid (sticks, crutches, walking-frames, etc) and/or require the assistance of another ambulant person. Some people in this category will, in addition, have reduced strength and dexterity in the upper body and/or a sensory impairment. Semi-ambulant people find it difficult to cover long distances (even 50 m may be too far). Specific design requirements include: short distances; provision of handrails and suitable places for taking a rest; also even and non slippery surfaces without any major changes in level;

c. **non-ambulant:** persons who temporarily or permanently require to use a wheelchair for mobility. They may propel themselves, or be pushed and manoeuvred by an assistant who may or may not be needed to assist with other tasks. Some people will be using a wheelchair for the first time due to being in hospital and will be unfamiliar with manoeuvring it. Some people who use wheelchairs will, in addition, have reduced strength and dexterity in the upper body and/or may also have a sensory impairment. Some will be able to stand on their feet whilst transferring to and from a wheelchair or to and from other facilities (such as a toilet, chair or bed); others will require assistance to do so (in some cases the use

of a hoist). Specific design requirements include the provision of sufficient space for passing and turning; even surfaces without changes in level; and ensuring that any counters, signs, handles, etc. are within the user's range of vision and grasp;

d. **manually-impaired:** persons who have a temporary or permanent lack of strength and/or dexterity in the shoulders, arms and/or hands. They may also be semi-ambulant and/or have a sensory impairment. Specific design requirements include doors which are not too heavy; suitably-designed handrails and controls, etc;

e. **visually-impaired:** persons who are totally blind or partially-sighted. Blind people find their way by noticing changes in the textures of floor and wall surfaces and ambient sounds and smells; some also need the help of a cane for orientation and for detecting obstacles. Partially-sighted people need plenty of light, and the colours of any fixtures and fittings they are trying to locate (or are on their guard against) must stand out plainly in contrast with the background. It must be remembered that vision deteriorates considerably with age; 40-year-olds need twice as much light and 60-year-olds three times as much light to see the same object as clearly as a 20-year-old. The more strongly an object contrasts with its surroundings, the easier it is to see. However, colours do not have to be garish; subtle changes in colour can be aesthetically pleasing, and can fit in with the general decor as well as providing contrast. Different colours in the same tone can appear very similar to people who are colour-blind – for example, a strong red and green together can look much the same – and so contrasting tones, or a combination of tone and colour, are very helpful for people with poor sight. Any type of cluttered design should be avoided, since this makes it more difficult for a visually-impaired person to "read" the shape of a space, and consequently impedes their ability to navigate. Good design therefore should not only contribute towards the "legibility" of a building, but also facilitate easy navigation through it. Specific design requirements include: a simple, well-planned layout; even surfaces with tactile indications of direction; no obstructions in walking areas; well-lit areas; signs placed at a convenient height, with space to stand in front to read them;

f. **hearing-impaired:** persons who are deaf and hard-of-hearing have the additional problem that their disability cannot be seen and is therefore not noticed by other people. For effective lip-reading, building areas must be well lit in order that the face of the person speaking is illuminated. Specific design requirements include: a simple, well-planned layout, with well-lit areas; surfaces which dampen ambient noise; signs placed at a convenient height, with space to stand in front; provision of induction loops at reception areas and in auditoria.

2.7 A checklist, giving a suggested sequence of activities to be followed in the planning and design of access and facilities for disabled people, was prepared by the Access Committee for England for the 1988/89 edition of HBN 40, Volume 4; this is reprinted as Appendix 1 to this volume of the current edition, and is commended to health authorities.

Statutory and other requirements

2.8 The guidance contained in this volume takes account, as far as possible, of all statutory and other requirements in force at the time of publication, but health authorities and trusts are reminded of their responsibility for ensuring compliance with all relevant statutes and regulations, such as the provisions of the Chronically Sick and Disabled Persons Act 1970 (as amended by the Chronically Sick and Disabled Persons (Amendment) Act 1976), the Disabled Persons Act 1981, the Disabled Persons (Services, Consultation and Representation Act 1986, and, in England and Wales, the Building Regulations 1991 together with the associated practical guidance in Approved Document M (in Scotland, the Building Standards (Scotland) Regulations 1990 together with Part T of the Technical Standards (Scotland)). Attention is also drawn to BS5810, Access for the Disabled to Buildings 1979 (currently under review). One of the effects of the 1981 Disabled Persons Act is to apply this British Standard to premises covered by the 1970 Act, which includes those open to the public. Practical guidance for complying with the Building (Disabled People) Regulations is issued by the Department of the Environment under Approved Document M: Access and Facilities for Disabled People, 1992.

2.9 Chapter 6 of this volume contains data relating to the ergonomic requirements for the movement of hospital patients and equipment. These ergonomic data sheets are principally concerned with the amount of "space" needed by disabled people when using health buildings or receiving treatment. They cover access to and egress from (and also movement within) health buildings. However, where the Statutes, Approved Documents, British Standards, HTMs, etc. stipulate additional requirements – such as larger dimensions – then these should be complied with.

Privacy

2.10 The design of the accommodation must preserve the dignity and privacy of patients, particularly where men and women are treated in adjacent areas and share certain accommodation and circulation spaces. These must be reconciled with the need for unobtrusive clinical observation, which is vital for the care of the patient.

Fire precautions

2.11 The principles of fire safety, and the need for fire precautions, apply equally to new buildings and to any upgrading of, or alterations to, existing buildings.

2.12 The project team should refer to Firecode (England and Wales), Firecode in Scotland (Scotland) which contains the Department's policy and technical guidance on fire safety in hospitals and other NHS premises. A full list of Firecode documents is provided in Appendix 2. For buildings where the means of escape guidance in Firecode is not applicable, additional guidance is provided by BS5588: Part 8 'Code of Practice for means of escape for disabled people'.

Upgrading, extending or adapting existing buildings

2.13 The standards set out in this HBN essentially apply to the provision of accommodation in a new building. However, the basic principles are equally valid – and should be applied, so far as is reasonably practicable – when existing accommodation is being upgraded, or when new accommodation is being constructed within an existing building which may have previously been used for other purposes. In some instances, compromises may have to be made between Health Building Note (HBN) standards and what is physically achievable.

2.14 Before any decision is made to carry out an upgrading project, consideration must be given to the long-term strategy for the service, the space required for the new service, and the size of the existing building. Regard must also be paid to the orientation and aspect of the building, whether or not the key HBN requirements can be met – for example, the need for accommodation with ground-level access and the adequacy and location of all necessary support services.

2.15 If a prima facie case for upgrading emerges, the functional and physical conditions of the existing building should be thoroughly examined, including:

- the availability of space for alterations and additions;
- the type of construction;
- any insulation provided;
- the age and condition of the building fabric – for example, external and internal walls, floors, roofs, doors and windows – which may be determined by a condition survey;
- the life expectancy and future adequacy of engineering services, including consideration of ease of access and facility for installating new wiring and/or pipework;
- the height of ceilings (existing high ceilings do not necessarily call for the installation of false ceilings, which are costly and often impair natural ventilation);
- any changes of floor levels, in order to eliminate or minimise any potential hazards for disabled people;
- any physical constraints to the proposed adaptation, such as load-bearing walls and columns.

2.16 When comparing the cost of upgrading or adapting an existing building to that of a new construction, due allowance (in addition to the building costs) must be made for such factors as the cost of demolition and salvage, the cost of relocating people, any costs incurred due to the disruption of services during the phased life of the project, and the temporary additional running costs due to any impaired functioning of areas affected by the upgrading work.

2.17 The cost of any proposed upgrading works should conform to the guidelines indicated in the Department's WKO letter (81)4 (AWO (81)8 in Wales). These guidelines take into consideration the estimated life of the existing building and the difference in cost between upgrading the existing building and constructing a new building.

Building components

2.18 The Building Components Database consists of a series of Health Technical Memoranda (HTMs) which provide specific design guidance on building components for health buildings which are not adequately covered by British Standards. No firms or products are listed. The numbers and titles of the relevant HTMs are listed in Appendix 2 of this volume.

Maintenance and cleaning

2.19 Materials and finishes should be selected to minimise maintenance and be compatible with their intended function. Any finishes that require frequent redecoration, or are difficult to service or clean, should be avoided. At the design stage, special consideration should be given to areas

such as entrances, corners, partitions, counters, and any others which may be subjected to heavy use. Floor finishes should be restricted in variety, and, in cases where soft floor coverings are specified and spillage is anticipated, these finishes should have a non-absorbent pile and a backing which is impervious to fluids. Wall coverings should also be robust, and chosen with easy cleaning in mind. (Health Technical Memoranda 56, 58 and 61 provide guidance on these aspects with regard to partitions, internal doorsets and flooring respectively.)

Damage in health buildings

2.20 When designing and equipping health buildings, the likely occurrence and effects of accidental damage should be considered. Damage in health buildings has increased over the years due to the use of heavier mechanical equipment for the movement of patients and supplies and, to some extent, as a result of lightweight, often less robust, building materials. Most damage to doors, and to floor and wall surfaces, is caused by wheeled traffic. Measures to minimise damage should be taken in the form of protective corners, buffers and plates, and to proper continuation of floor surfacing – that is, strong screeds and fully bonded floor coverings. Protective devices should be capable of being renewed as the need arises. Reference should be made to the relevant British Standards, to the advice in the Department of Health's DS (Supply) letter 42/75 (dated 5 August 1985) regarding the buffering of movable equipment, and to the guidance in HBN 40, Volume 4 ('Circulation areas'). Further information is provided in HTMs 56, 58 and 61.

Signposting

2.21 For general locational recommendations, reference should be made to the ergonomic data sheets and accompanying notes on signposting in Section 6, Volume 1 of HBN 40. HTM 65, 'Health signs', should be consulted for further specific guidance on signage design and practicality considerations.

External environment

Parking areas

2.22 Special parking spaces are required for cars and ambulances. Such spaces should be of sufficient size, both in width and length, to allow unobstructed access, also for vehicles used by disabled people (whether ambulant, in wheelchairs, alone or assisted). In particular, this will necessitate the allocation of considerably more space alongside each parking space, in order to permit the manoeuvring of wheelchairs and the transfer of disabled persons to and from cars. (Some cars are specially adapted with electro-mechanical transfer equipment which is installed in place of some of the car's normal seating arrangements.) The parking and setting-down areas should be level, near the building's entrances, and located to allow the users to reach the entrances without obstruction. The setting-down area for ambulances should be under cover. (Reference should be made to HBN 45, 'External works for health buildings' (1992), for more detailed guidance on the subject.)

2.23 Well-drained, slip-resistant surfaces are required. Any crossovers should be ramped. External doorways should either be free from thresholds and steps, or, if any change in level is necessary, a suitable ramp will be required. The doorway should be wide enough to allow the unobstructed passage of patients in wheelchairs.

2.24 Further guidance regarding the design of car parking areas and associated facilities can be found in the notes to the relevant ergonomic data sheets in Chapter 6, Volume 1 of HBN 40.

Courtyards

2.25 Courtyards enable more rooms to receive natural daylight and ventilation, and provide an outlook which can compensate for the lack of a more extensive view. Suitable layout and planting can help to preserve privacy in surrounding rooms. Ground-cover planting is preferred to grass, as it is often more successful and is generally easier to maintain. Access for maintenance purposes should be from a corridor, so that patients and staff are not disturbed. (Reference should be made to HBN 45, 'External works for health buildings' (1992), for more detailed guidance on the subject.)

Circulation spaces

2.26 Sufficient space should be provided for the movement of wheelchair users – that is, passage through doors and along corridors, also turning and manoeuvring in lobbies, toilets, changing areas and lifts. Changes in level should be avoided, or else ramps should be provided if this is unavoidable; the space where any such change in level occurs should be particularly well-lit.

2.27 In order to help the ambulant disabled person, an easy-grip tubular handrail (with a diameter of between 45 mm and 50 mm) should be provided along both sides of a corridor. All doors should be fitted with door closers and rising-butt hinges. Any self-closing doors should be easy to open and capable of being temporarily restrained while the disabled user is passing through. Avoidance of projections and obstructions is particularly important for blind and partially-sighted patients. Items of essential equipment such as fire extinguishers, hose reels and other appliances should

either be recessed into the wall or boxed in. Large areas of glass should be clearly marked, at eye level, with a coloured label or contrasted logo at least 150 mm by 150 mm in size. Careful consideration should be given to such matters as the direction of door swings and the siting of radiators, call points and notice boards; these should, while remaining accessible, create minimal (if any) obstruction.

Doors

2.28 Doors and frames are particularly vulnerable to damage from mobile equipment, and materials capable of withstanding such damage should be used. All double swing-doors should incorporate clear glass vision panels, but specific considerations of clinical privacy or safety may require that the panels should be capable of being obscured. Where necessary, doors should be capable of being fastened in the open position. Magnetic door-retainers, where fitted, should not restrict the movement of traffic. Reference should be made to HTM 58, 'Internal doorsets' and to HTM 59, 'Ironmongery'.

Windows

2.29 In addition to the various statutory requirements, the following aspects require special consideration when designing a health building: illumination; ventilation; insulation against noise; user comfort (including the prevention of glare); energy conservation. Windows have an important function in health buildings, in providing a reassuring visual link with the outside world. The building design should ensure that it is possible for cleaners to have easy access to the inside and outside of windows. Specific guidance on types of windows to be used and in particular their safety aspects, is available in HTM 55, 'Windows'.

Natural and artificial lighting

2.30 A light and pleasant interior is required in a health building, with an adequate level of illumination that can be varied to suit functional activities. Because natural lighting is so variable in quality and quantity, the provision of a comprehensive artificial lighting installation is essential. Sunlight enhances colour and shape, and helps to make a room bright and cheerful. The harmful effects of solar glare can be dealt with by architectural detailing of window shapes and depth of reveals, as well as by installing external and/or internal blinds and curtains. Wherever possible, spaces which are to be occupied by patients, their escorts or staff should have natural daylight, with an outside view. Artificial lighting, as well as providing levels of illumination to suit particular activities, can make an important contribution to interior design in health buildings. Further guidance regarding the provision of lighting is given in Chapter 4 ('Engineering services') of Volume 1.

Internal spaces

2.31 Internal spaces may contribute to economy in planning; if, however, additional artificial lighting and ventilation are then required, both capital and running costs are likely to be increased. Such rooms do not provide good working conditions, and internal spaces should therefore be used only for activities of infrequent or intermittent occurrence or which demand a controlled environment. Rooms that are likely to be occupied for any length of time by staff or patients should have windows.

Ventilation

2.32 Natural ventilation is preferred unless there are internal spaces or clinical reasons which call for the installation of mechanical ventilation or air conditioning systems, both of which are expensive in terms of capital and running costs: Planning solutions should be sought which take maximum advantage of natural ventilation. The costs of providing mechanical ventilation and air conditioning can be minimised by ensuring that wherever practicable core areas are reserved for rooms whose function specifically requires mechanical ventilation or air conditioning, irrespective of whether their actual location is internal or peripheral. Further guidance regarding ventilation systems can be found in Chapter 4 ('Engineering services') of Volume 1.

Flooring

2.33 Floor coverings and skirtings should contribute to the provision of a non-clinical environment, yet at the same time be hardwearing. They must not present a hazard to disabled people, nor restrict the movement of wheeled equipment. Floors should neither be, nor appear to be, slippery, and their patterning should not induce disorientation. The material used for flooring should be non-reflective. Changes in floor level should be avoided wherever possible. Such factors as surface drag, static electricity, flammability, infection hazards and impermeability to fluids have also to be considered when choosing flooring. (HTM 61, 'Flooring', should be consulted for advice on user requirements and performance selection.) Finishes should be appropriate for the activities to be carried out, also restricted in variety for ease of cleaning and compatible with agreed cleaning routines.

Fittings

2.34 Vertical space considerations will include the positioning of any fitting or equipment likely to be used by a disabled person. This will include door handles, telephones, switches, shelving, handrails, grabrails, wash-basins, soap dispensers, mirrors, coat-hooks and paper-towel dispensers. Reception desks should always be designed so that they are

unobstructed for, and accessible to, persons in wheelchairs. Both horizontal and vertical space considerations are detailed in the ergonomic data sheets included in Chapter 6 of this Volume.

Information technology

2.35 Information technology (IT) has a central role in health management. The use of computers and telecommunications (computer screens, input devices, printers, fax machines, modems, etc.) – and indeed the rate of technological innovation – continues to increase. Computer workstations must comply with the Health and Safety Executive's Display Screen Equipment Regulations (L26, 1992). Computing expertise is now widely available in the NHS, and project teams should ensure, at an early stage, that they keep themselves well informed concerning current and projected local computing policies, and that their own proposals conform with such policies.

2.36 There are three principal factors which must be considered when providing IT equipment:

- space; computer workstations must be designed to the dimensions which will provide sufficient space for the computer, its peripherals and its operator;
- visibility; computer workstations should be designed and sited so that room lighting provides satisfactory lighting conditions, giving sufficient and appropriate contrast between the screen and the background environment so that the content of the screen is clearly legible; the ambient lighting, and other sources of light – such as windows and brightly coloured fixtures or walls – should not cause reflections or glare on the screen;
- noise; most modern printers (for example laser and inkjet printers) have acceptable noise levels; if a printer is noisy, a printer hood could be fitted, or alternatively the printer could be located in an easily accessible but separate area.

Security

2.37 Assaults on hospital staff and theft of NHS property should be addressed. The project team should discuss security with the local police Crime Prevention Officer and the hospital or district's security officer or adviser at an early stage in the design of the building. Fire and Security Officers should be consulted concurrently, as the demands of security and fire safety may sometimes conflict. The attention of planners is drawn to HSG (92)22 (in Wales WHC (92)46) and the revised NHS Security Manual to which it refers, concerning issues of security.

Portering

2.38 The movement of goods or patients to, from or within the building may be beyond the capacity of its occupants; this situation may generate requirements for portering assistance.

Smoking

2.39 NHSME circular HSG(92)41 dated October 1992, 'Towards smoke-free NHS premises', promulgates Government policy set out in the 'Health of the Nation' white paper; it required NHS authorities and provider units to implement policies so that the NHS became virtually smoke-free by 31 May 1993. The circular advises that a limited number of separate smoking rooms should be provided where necessary, for those staff who cannot give up smoking and for those patients who cannot stop smoking. No specific provision has been made in this Note, therefore, for any staff or patients who wish to smoke.

3.0 Critical dimensions

Introduction

3.1 Critical dimensions are those dimensions which are critical to the efficient functioning of an activity; thus, the size of components, their positioning and the space around them may all be critical to the task being performed. Guidance on these dimensions for a particular activity is provided in the form of component-user data sheets. These illustrate components – that is, equipment, furniture and fittings – and provide ergonomic data on the space required for users to move, operate or otherwise use the component; information about the component – for example, fixing heights – and the users – for example, reach – is also provided. Component-user data sheets thus complement the information given on Ergonomic Data Sheets.

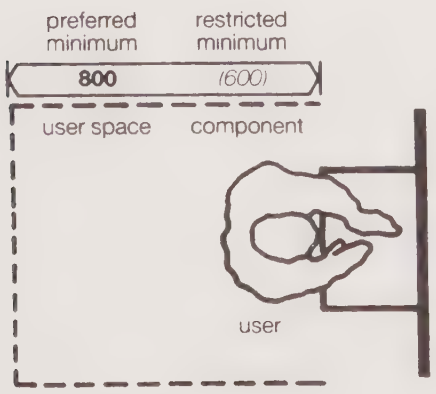
Component dimensions

3.2 These relate to the size and position of components, as follows:

a. sizes of components are shown thus:

b. preferred component fixing heights are shown as heights above floor level, thus:

(In some cases an acceptable range of fixing heights is also given in italics.)



Activity dimensions

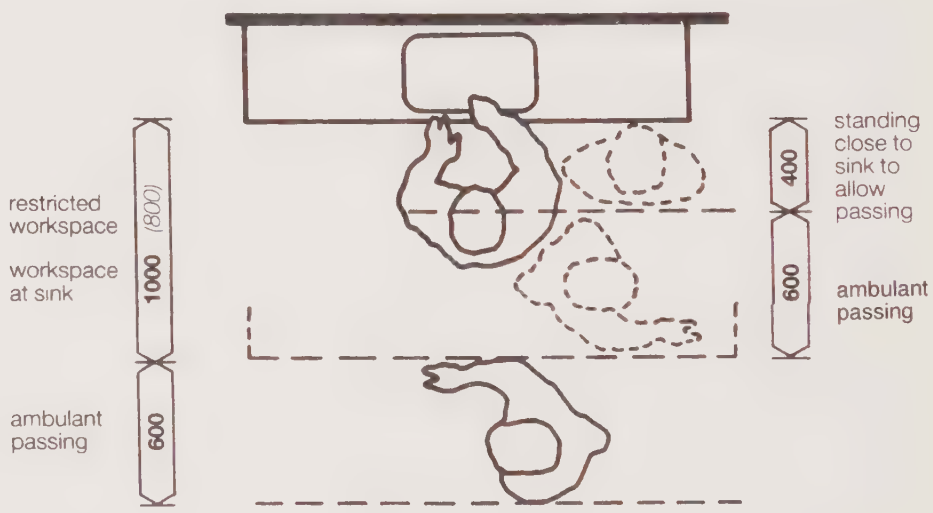
3.3 Activity dimensions define the user space, which is the minimum space required to perform an activity. Two types of activity dimension are given:

a. preferred minimum – this defines the minimum space required to carry out an activity efficiently, and is shown in bold type;

b. restricted minimum – this will only allow the activity to be performed at the expense of the user experiencing some difficulty. It is not recommended for general application but may be appropriate when considering the overlapping that can be allowed when two user spaces are adjoining.

Selection of activity dimensions

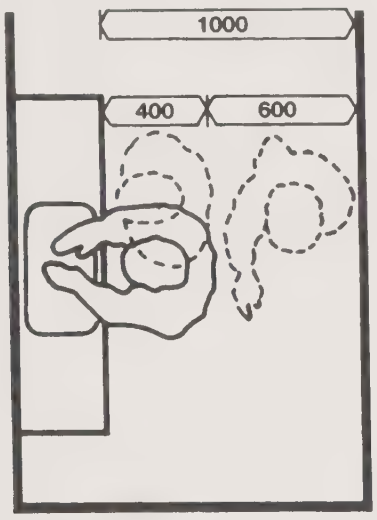
3.4 When using component-user data sheets to design activity space layouts, selection of the appropriate activity dimensions is essential for economy and efficiency. Selection should be based on careful consideration of the frequency, duration, timing and importance of the activities and also the number of people involved. A typical example of the use of a sink showing activity dimensions provided by the component user data sheet is shown below.



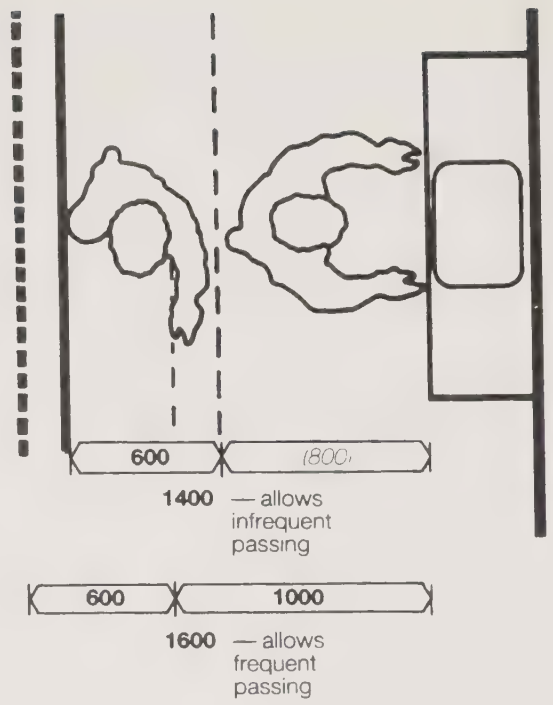
Examples

3.5 The following worked examples show the sink being used in 3 different situations and show how the appropriate dimensions would be selected but do not necessarily relate to this particular Building Note. These examples have been simplified; additional factors such as the movement of mobile equipment may also be critical.

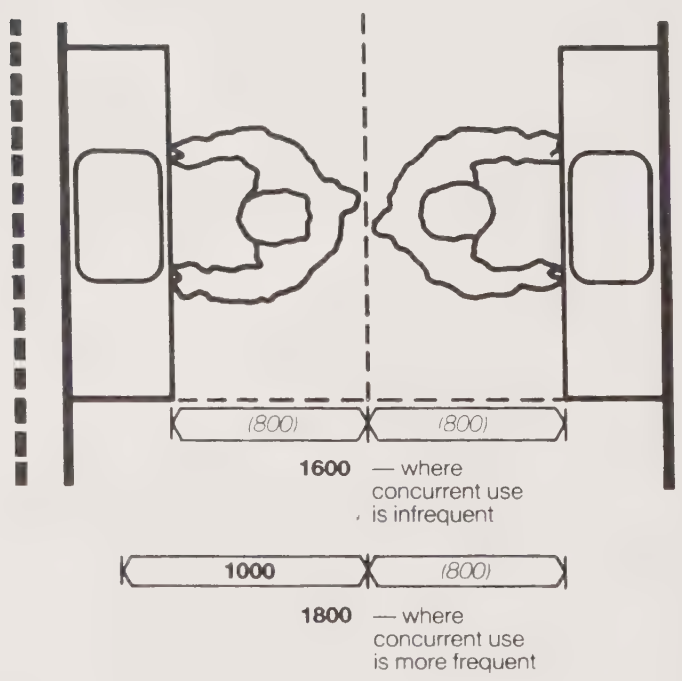
a. if the room is normally occupied by one person only, the 1,000 workspace dimension may be applicable. An (800) restricted dimension should not be used, as this dimension is only applicable where two user spaces are adjoining, not where an individual user space is bounded by a wall or solid obstruction. If the person using the sink stops work and stands close to the sink, 1,000 is also sufficient space to allow a second person to pass, that is 600 + 400;



b. if space is required to allow a person to pass, without the user of the sink stopping work, then the 600 passing dimension is added to the workspace dimension. If passing is infrequent, then temporary restriction of the sink user's space may be acceptable; this gives an overall dimension of 600 + (800) = 1,400. If passing is frequent, and restriction of the sink user's space is not acceptable, the overall dimension is 600 + 1,000 = 1,600;



c. where space has to be provided to enable two sinks to be used concurrently, the overall dimension between sinks will be the sum of the workspace dimensions – for example, if concurrent use is infrequent and of short duration then (800) + (800) = 1,600 may be acceptable. Alternatively 1,000 + (800) = 1,800 allows the full workspace for one sink user and restricted space for the second user, where concurrent use of the sinks is more frequent.



3.6 Note. The passing of a third person between the two sink users may also be critical in this example. Where the sinks are staggered 1,400 may be acceptable, as in example (b).

4.0 Engineering services

The engineering services for the first three volumes of this Health Building Note are described in Volume 1, Chapter 4.

5.0 Cost information

Introduction

5.1 For all types of health building it is clearly of vital importance that building and running costs should be kept as low as possible, consistent with acceptable standards. Within this general context, Health Building Notes provide guidance on the design of a range of accommodation for health buildings which the Department, in conjunction with the National Health Service, recommends for the provision of any given service.

5.2 While using the information given in this section, it is important to note that this information is intended to be used as a standard item for insertion into a separate functional unit (such as an A and E Department) as required.

Works cost

5.3 To prepare an estimate of the works cost for a scheme, reference should be made to the Capital Investment Manual (England and Wales; or Health Building Procurement guidance in Scotland). The total cost allowance for a scheme is then derived by aggregating the cost of the functional units, the Essential Complementary Accommodation (ECAs) and the Optional Accommodation and Services (OAS), as appropriate to the particular scheme.

5.4 The cost allowances cover the building and engineering requirements set out in Volumes 1 to 3 of this Note. In costing the following common spaces, it has been assumed that these areas will be incorporated into a two-storey hospital or other health building where the shared use of engineering services and systems is envisaged.

Functional units

5.5 The Schedule of Accommodation common to the first three volumes of this HBN can be found in Volume 1, Chapter 5. It does not in itself comprise a functional unit, but is to be used as a "menu" of standard items, which can then be inserted into the accommodation schedule for other functional units. This represents an attempt to standardise future HBNs.

Toilets

5.6 The schedule contained within Volume 1, Chapter 5 consists of a range of the most common options available for the formation and calculation of costs for any given functional unit.

Showers

5.7 The schedule contained within Volume 1, Chapter 5 consists of a range of the most common options available for the formation and calculation of costs for any given functional unit.

Dimensions and areas

5.8 In determining spatial requirements for a health building, the essential factor is not the total area to be provided but its critical dimensions – that is, those dimensions critical to the efficient functioning of the activities which are to be carried out at that location. To assist project teams in preparing detailed design solutions for the relevant rooms and spaces, studies – in the form of critical dimensions – have been carried out in order to establish dimensional requirements.

5.9 For development planning purposes, and at the earliest stage of design, it may be convenient for designers to have data available which will enable them to make an approximate assessment of the sizes involved. For this reason, the measurements prepared for the purpose of establishing the cost allowances are included in the associated Schedule of Accommodation, contained within Volume 1, Chapter 5 of this HBN.

5.10 It is emphasised that the measurements given do not represent recommended sizes, nor are they to be regarded in any way as specific individual entitlements, but rather purely as ergonomic guidelines.

Circulation areas

5.11 Space for circulation areas has not been included within the schedule shown; this will be added to the overall functional unit areas, which have been calculated elsewhere and presented within the HBN relevant to that particular unit. Allowances have been included within the Schedule of Accommodation for the "planning provision", "engineering zone" (adjacent to the external walls), and any small ducts and partitions.

Communication routes

5.12 No allowance for staircases and lifts, or plantrooms, is included in the associated Schedules of Accommodation.

These areas are dealt with under the particular overall functional unit to which they belong, standard sizes of which are included within HBN 40, Volume 4.

Engineering services

5.13 The engineering services cost allowances for the first three volumes of this Health Building Note can be found in Volume 1, Chapter 5.

6.0 Example layouts

6.1 Reception area

General points

1. The reception counter should provide a low, open, friendly facility that does not give any sense of a barrier or generate a feeling for the patient of "them and us". Patients, escorts and staff must be able to talk and exchange information with ease and, if necessary, in privacy.

2. The main functions of receptionists will be receiving and registering patients and their escorts upon arrival and completing discharge procedures upon the departure of patients. The receptionists will also deal with enquiries made in person, remind escorts of arrangements for collecting patients and provide a link with nursing staff. Information on the movement of patients and their health records through the unit may be provided by means of computer links or telephone. Space will be required at the reception counter for VDTs, a working supply of stationery and office accessories, and parking a health records trolley.

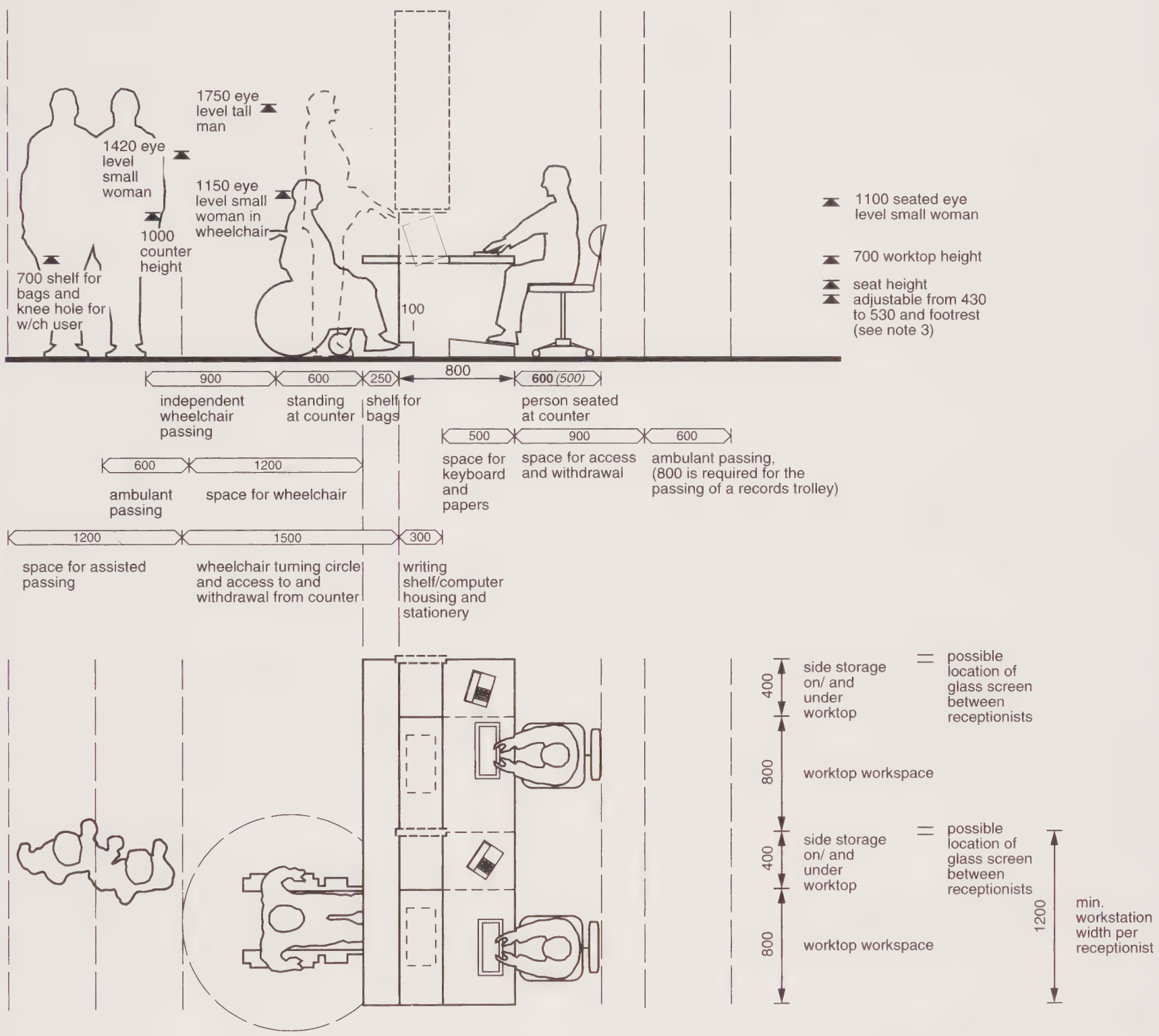
Activities:
Patients may report to confirm arrival or book appointment, collect or deliver messages, deposit samples, collect prescriptions etc. Seated receptionist may: monitor public traffic in and out of department, patients in a waiting area and oversee the sequence of consultations and treatments, interview patients in some degree of privacy, enter and look up details on a computer, use patient record documents, appointment cards and make and receive telephone calls.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Reception Counter

any department

Users:
Receptionists and patient (with or without escort), patient may be ambulant, semi-ambulant or in a wheelchair.



Notes:

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1. A sitting height counter may act as a psychological barrier to a patient/escort who may be violent. A counter depth of 800 should help to protect staff, whilst still allowing receptionist and patient to hear each other. A counter depth of 800 will also allow adequate space for the computer. The computer could be protected by a raised area, though this should not throw shadows on the screen. The worktop height should be 700 for sitting to use the keyboard.

2. Glazed screens between receptionists maximise confidentiality of discussions between patient and receptionist.

3. An adjustable height (430 - 530), swivel chair with castors is required for the receptionist. A footrest should be provided.

4. Each workstation should incorporate an alarm button for staff to summon assistance.

5. Mobile, under worktop storage units for personal belongings are preferred for greater flexibility.

6.2 Staff base – Ward

('A' Sheet Code T0101)

Definition

1. The staff base is the nursing, administrative and communications centre of the ward or department. It provides a focal point to which all staff, whose time is mostly spent with the patients, can return to record data, issue and receive information and receive verbal and written instructions.

General points

2. There should be visual and auditory supervision of the main patient areas and of the entrance to the ward.

3. The facilities suggested are intended to meet the needs of most in-patient wards of up to 28 beds, but modifications may be needed to accommodate speciality requirements for example ITU or coronary care. There may be sufficient storage to accommodate a working supply of a variety of stationary, the holding of nursing records and patients' current records and X-ray films without providing cupboards behind the desk. This should be assessed at individual ward level. Generally need is underestimated and this leads to improvisations which impair working efficiency.

4. The design, layout and location should be such that activities which are carried out throughout the 24 hours do not disturb the patients occupying the nearby bed areas. Disturbance can be caused by talking, telephone and patient / nurse communications systems, lights and general activity. This can be particularly disturbing to the patients at night and means of minimising or overcoming this problem must be considered.

5. Clear space for movement past the base must be maintained even when doctors, patients, nurses or visitors are standing at the counter.

(Notes to ergonomic data sheets)

Standing worktop height

1. A standing worktop height of 1060 mm is satisfactory for the majority of users including: staff standing to write quick notes, staff seated inside conversing with other staff, patients or visitors including people in wheelchairs, who are on the outside. This will accommodate a protective hood for computers as well as vertical A4 pigeonholes. It is also possible to fit small, downlighter desk lamps for night time use just above the pigeonholes.

Access to the staff base

2. An opening of 1800 mm to the staff base will allow for the notes trolley to be parked and for two people to pass each other. However, an opening of 1400 mm is adequate.

Sitting worktop height

3. A worktop height of 720 mm is ideal for carrying out writing tasks. A worktop of 680 mm would be preferred for using computer keyboards. However, since computers will be used infrequently and for short periods and since staff may occasionally stand to quickly enter or retrieve information from the computer, a 720 mm worktop is satisfactory. The maximum thickness of the worktop at the front should be 30 mm. Even with adjustable chairs, a thicker worktop can prevent staff sitting with their thighs comfortably under the worktop. If required, strengthening bars could be set back 500 mm from the front of the worktop.

Chairs should have castors and adjustable seats and backrests and footrests should be provided.

Worktop width

4. Whilst a space of 800 mm is considered satisfactory for one person, for two people working together occasionally 600 mm each is considered satisfactory.

Pigeonholes

5. Pigeonholes should be horizontal rather than vertical and smaller ones should take account of the size of the forms to be stored or be adjustable. To give complete flexibility it is suggested that adjustable vertical and horizontal partitions are provided.

Under worktop storage

6. It is recommended that mobile rather than fixed under-worktop storage units are provided since they greatly improve the flexibility of where staff can sit.

Observation of patients

7. Observation of patients from the staff base, other than general observation, is not its main function and should therefore only be a consideration, rather than a major factor, in its design and location.

Telephones

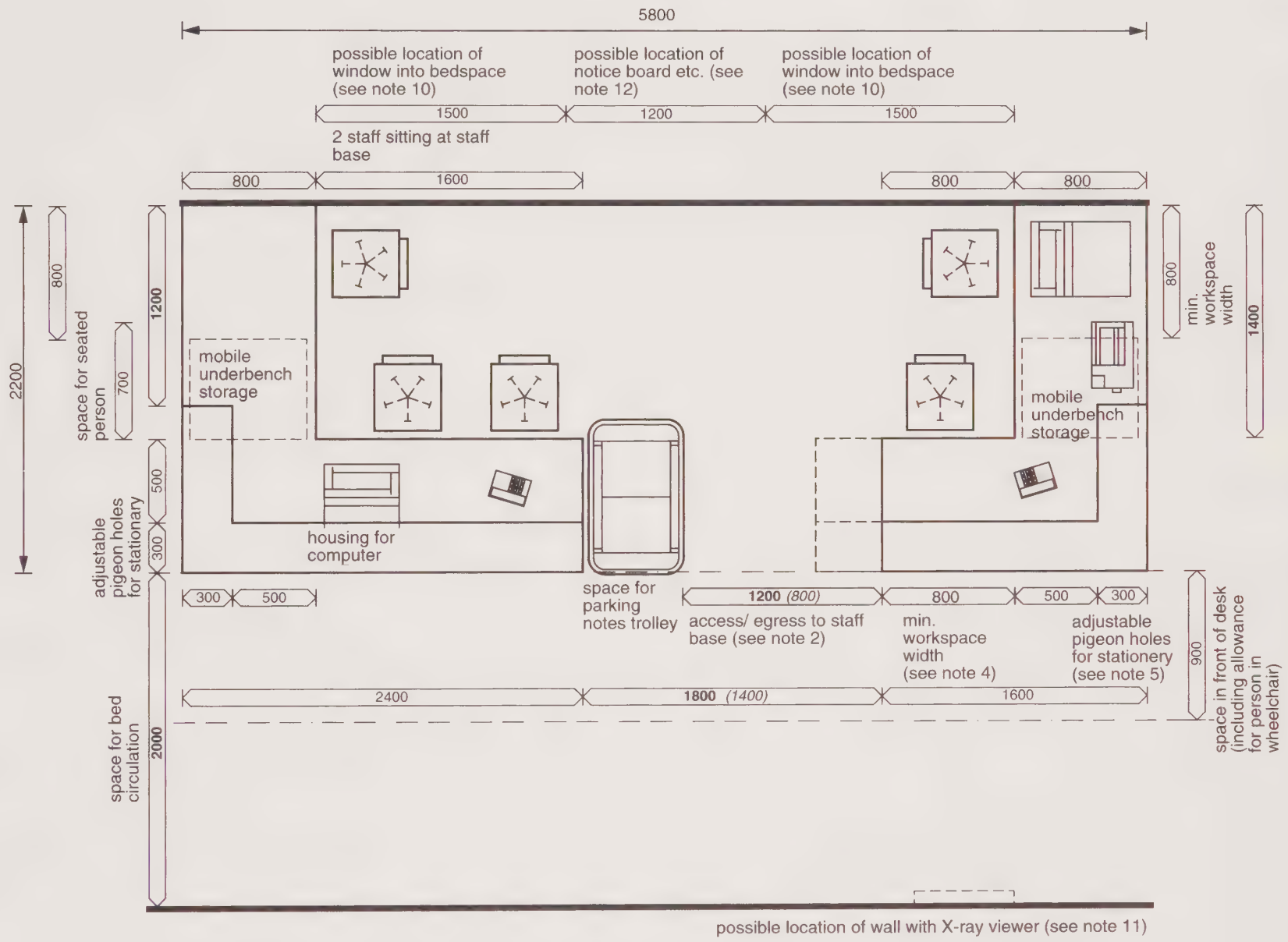
8. It is recommended that a platform or cut-away section be provided on each side of the front of the staff base to facilitate ease of answering the telephone from inside and outside of the staff base.

Activities:
Nursing, administrative and communication centre for a nursing section of up to 24 (28 beds at most). (Modifications may be required to accommodate special requirements, e.g. ITU). Staff base acts as a focal point to which staff, whose time is mostly spent with patients, can return to record data, issue and receive information and receive verbal and written instructions.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Staff Base

Users:
Staff



Notes:

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Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

a. See notes on opposite page

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Lighting

9. Suspended luminaires with 50% upward and 50% downward lighting will provide pleasant lighting conditions. There must be minimum spill in the bedroom or reflected in the window forming the back of the staff base area. The light must not reflect back from the worksurface. A dimmer switch to allow the level of 500 lux to be dimmed progressively down to 120 lux and set by the staff to suit their requirements is an advantage for night time work. It is recommended that local lighting is provided on the desk for deep night time use when the main general lighting luminaires would be switched off.

Glazing

10. There is no advantage to having the whole of the area between the staff base and multi-bedroom glazed. It does not assist staff in observing patients and light from the staff base at night is disturbing for the patients in the adjacent beds. The solid area between the two glazing panels could be used for a notice board etc. Vertical blinds could be fitted at the windows onto the bedrooms, thus allowing staff to be aware of activities without encroaching on patient privacy or allowing patients in beds adjacent to the windows to see confidential information on the computer screens.

X-ray viewer

11. The x-ray viewer should be sited on the wall opposite the staff base to prevent congestion within the staff base. A folding surface could be provided adjacent to the X-ray viewer for placing/sorting X-rays but this must be sited with care so as not to cause a hazard.

Notice board

12. A notice board is required inside the staff base for telephone numbers, blood cards, etc. A notice board on the wall facing the staff base would be satisfactory for information for patients, thank you cards, etc. A board could be provided which notes the names and bed positions of the patients.

6.3 Pantry

Space	'A' Sheet Code
Pantry 1	
30 Persons	P0603
Pantry 2	
60 Persons	P0604

Definition

1. An activity space with facilities for the preparation of beverages and light snacks and associated activities.

Note: In applying the recommendations to in-patient areas it is important to note that this guidance assumes that there is a central laundry service and a central wash-up service for all crockery, cutlery etc.

General points

2. The pantries suggested are intended to meet the needs of one or more wards but may be applicable to other departments and to other health buildings.

3. Special attention should be paid to ensuring that the pantry is adequately sound-contained to avoid undue disturbance to patients.

4. Variations of space and equipment may be required to comply with local whole-hospital catering policies.

5. Finishes should comply with environmental health requirements.

6. The general lighting should be positioned so that the working surfaces are adequately illuminated.

Note: Drawings are not provided for this space, which has no special plannning requirements.

6.4 Utility spaces and disposal

Space	'A' Sheet Code
Clean utility	
In-patient accommodation	T0601
Dirty utility	
with bed-pan disposal unit	Y0301
Disposal room	
general	Y0603

Definition

Clean utility

1. The clean utility is the holding and preparation area for all clean and sterile supplies used in the treatment of patients, and may be used for the safe keeping of drugs, medicines, lotions etc.

Dirty utility

2. The dirty utility provides facilities for storage of single use containers used for the collection of human waste, its subsequent disposal and other associated activities, and the temporary holding of used equipment, materials and refuse prior to transfer to the disposal point to await collection.

Disposal room

3. A room which is a departmental holding point for bagged or contained equipment and refuse awaiting the collection service.

General points

Clean utility

4. The facilities suggested are intended to meet the requirements of an in-patient ward of up to 28 beds for a period of up to 72 hours. If local supplies policy requires longer periods, these facilities will probably need to be reviewed. The activities in clean utility spaces in wards and other departments are similar but there may be differing storage requirements to meet the needs of a particular clinical specialty.

5. A flexible approach to storage is necessary and must take into account manufacturers' varying methods of packaging (including ranges of dispensers), the variable quantities and range of items required, the need to meet local supplies distribution policies, and the possible changes over a period of time that will take place in all these areas.

6. Adjustable open storage is preferred. Cupboards should be provided only where security is required for statutory reasons (that is Drugs Regulations) or where the misuse of items may be potentially dangerous.

Dirty utility

7. The disposal activities for most wards are very similar but some specific modifications may be required for certain specialties for example central delivery units, out-patient and diagnostic departments. These may require special provision for certain of the activities only.

8. The facilities suggested are intended to meet the needs of a general in-patient ward of up to 28 beds, where the operational policy is based on the use of disposable bed-pans.

9. Open adjustable shelving is preferred, for reasons of economy, convenience and flexibility, except where security is required.

10. The need for a refrigerator for holding of specimens for pathology investigations should be decided at project level and will depend upon the clinical specialty of the ward and the local laboratory service.

11. Only limited provision is made for the temporary holding of materials requiring disposal or reprocessing. As soon as sacks and bags have been filled they should be sealed and taken as soon as possible thereafter to the associated disposal room to await collection, thus avoiding obstructions within the activity space, and a build up of odours. The space required for temporary holding will depend on the hospital disposal policy.

Disposal room

12. The provision of a disposal room avoids obstructing either the working space within the dirty utility or general circulation space. The preferred location, accessible either externally or from the hospital street would enable the porters to make the collection without having to enter the department.

13. The size of the disposal room will be for decision at local project level and will depend upon the assessed workload and local disposal policy.

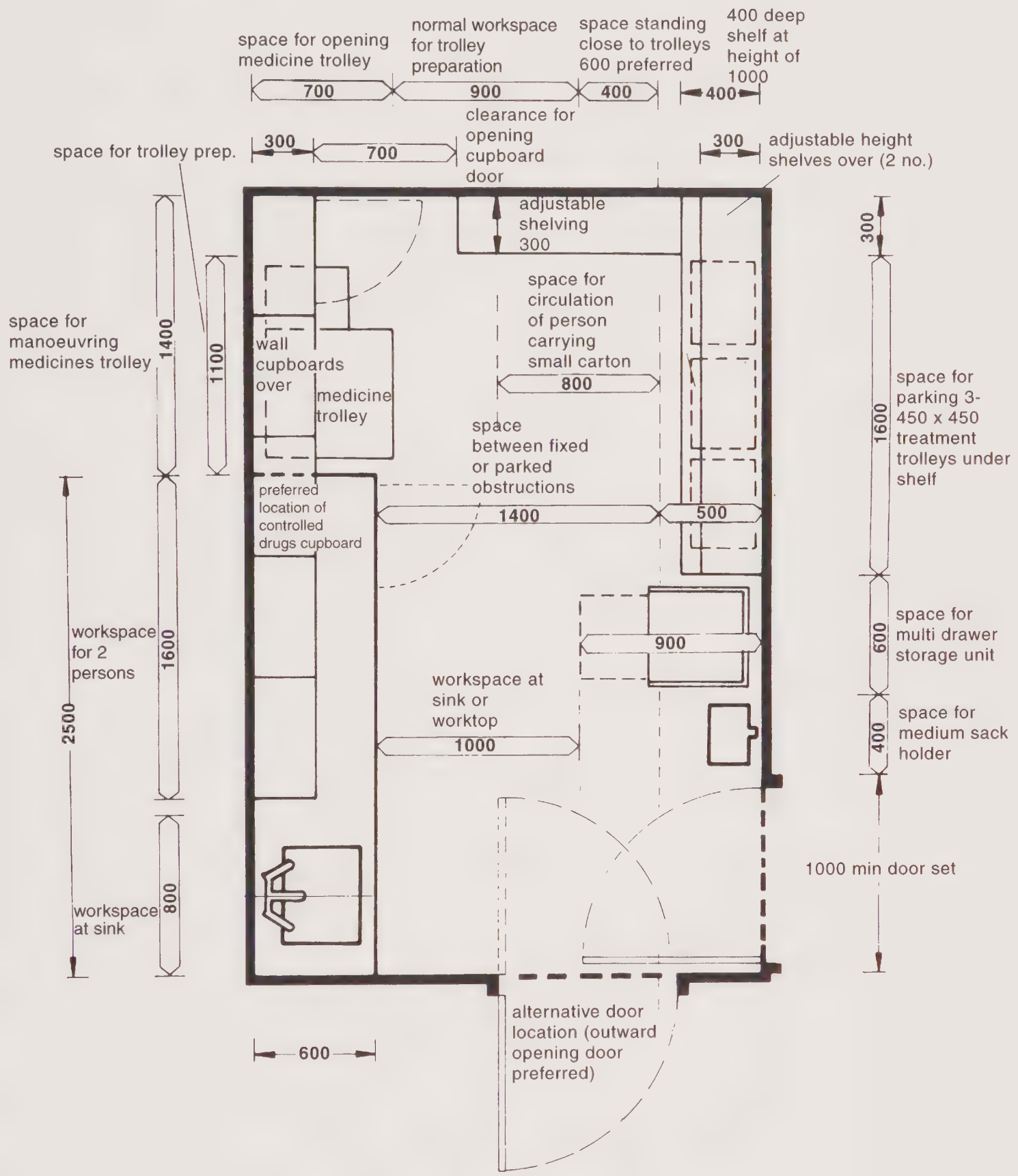
Note: Drawings are not provided for this space, which has no special planning requirements.

Activities:
Holding and preparing all clean and sterile materials used in the treatment of patients and may be used for the safe keeping of drugs, medicines, lotions, etc.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Clean Utility

Users:
Staff



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Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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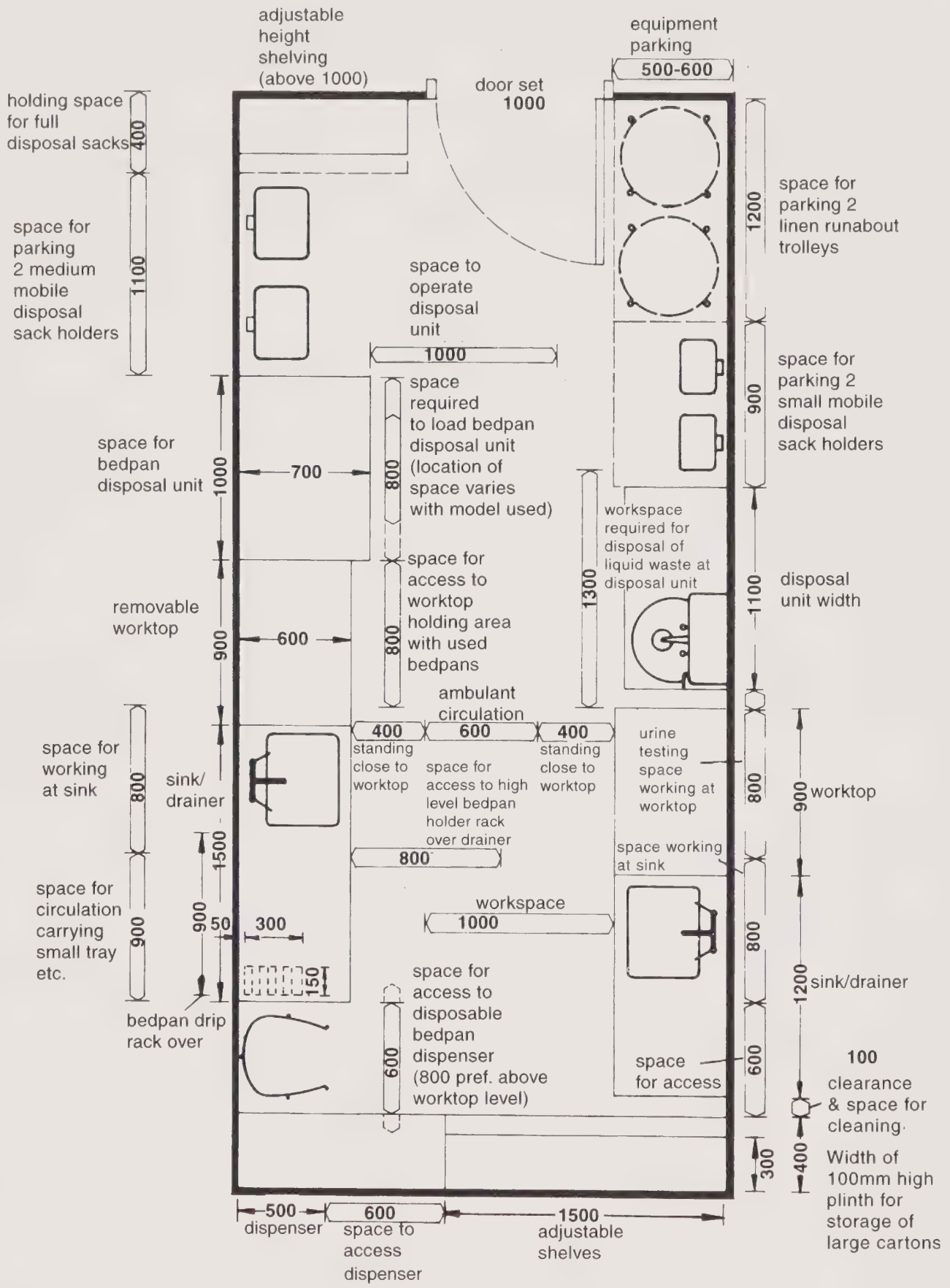
1. The facilities shown are the minimum for a ward of up to 28 beds for a period of up to 72 hours. (If local supplies policy requires a longer period these facilities may need to be reviewed). The activities in clean utility spaces in wards and other departments are similar but there may be differing storage requirements.

Activities:
Storage of single use containers used for the collection of human waste, its subsequent disposal and other associated activities and the temporary holding of used equipment, materials and refuse.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Dirty Utility

Users:
Staff



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6.5 Cleaning spaces

Space	'A' Sheet Code
Cleaning space	
general	Y1501
Cleaning space	
team / heavy duty	Y1502

Cleaning space – general

Definition

1. The general cleaning space is the base from which domestic services staff provide the immediate day-to-day cleaning services in wards and departments. It provides storage for cleaning materials and equipment in daily use and facilities for the various activities undertaken.

General points

2. Provision should be based on one cleaning space general to each ward and one to each department. The number of cleaning spaces appropriate to the building will be dependent upon (i) the operational policy of domestic services and (ii) the compromise achieved between the need to locate spaces in close proximity to the areas served and the need to limit the number of such spaces to avoid duplication of space and equipment.

3. The scope for sharing between departments or wards should be explored by project teams who should consult with local domestic services management; sharing may alter basic equipment needs. Where there are long distances between cleaning spaces and remote activity areas, peripheral facilities should be provided for emptying and filling of bowls and buckets: in wards the dirty utility may serve this purpose.

4. The type and number of items of equipment and materials to be stored is dependent upon the finishes used in the accommodation, numbers and deployment of staff and the frequency of cleaning. This in turn will determine the space requirement.

5. 'A' Sheet Y1501 is based upon the assumption that floor areas in wards and departments will have approximately 70% textile coverings and 30% PVC coverings and other hard floor finishes. It is assumed that walls, doors and working surfaces are smooth and easy to maintain. The equipment required will vary for different proportions of floor coverings and types of finishes. In areas such as the operating theatres, additional items for example Cleaner Suction wet/dry (Activity Data 'B' Sheet C52CE) will be required; individual Health Building Notes will provide guidance on suitable finishes and any necessary variations from Y1501 for the department concerned.

6. A general cleaning space should be planned to allow adequate access for equipment and adequate space for storage. Space is also required for manoeuvring cleaning machines, for loading and unloading trolleys, and parking them, emptying and filling buckets and bowls and routine servicing and cleaning of equipment. There should be unrestricted access to the sink.

7. Where other facilities are not provided for staff at their place of work, small security lockers may also be required for storage of small items of personal belongings such as handbags etc.

8. It is important that the project teams consult with domestic services managers at an early stage to ensure that the selected equipment is suitable for the finishes proposed and meets the needs of the service to be provided, the operational policy, and any special requirements within the district/area.

9. 'A' Sheet Y1501 provides examples of generic types of equipment and their space occupying components. These may need to be varied to accord with individual domestic service policy.

10. Under normal circumstances suction machines which conform to the standards of BS 5415 for noise and filtration efficiency should be used for patient areas. Selection of alternatives to 'A' Sheet Y1501 should normally be from items available under general contract and project teams in conjunction with domestic services managers should be aware of the items available in the Health Service Supply Purchasing Guide.

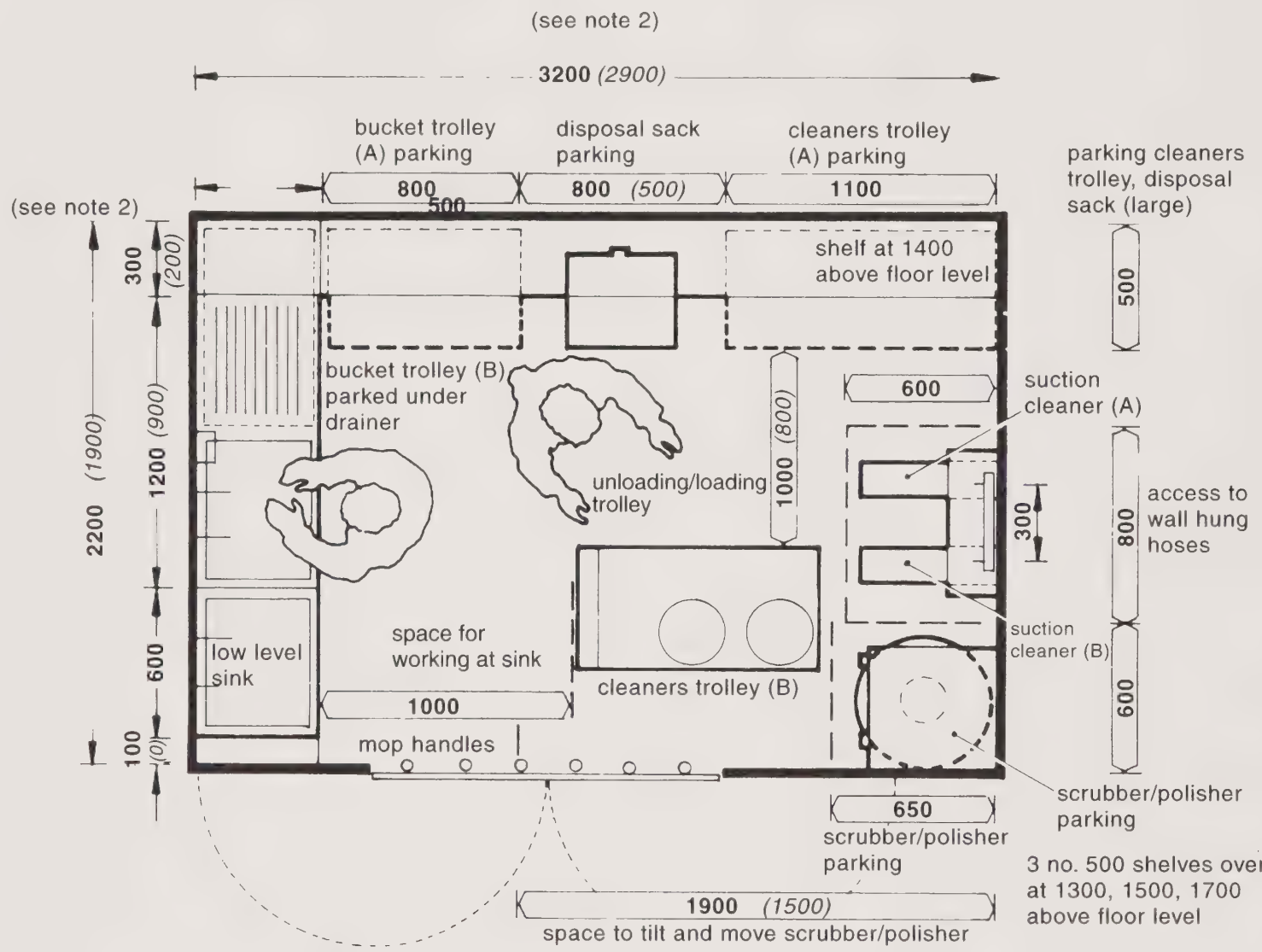
Activities:
Space from which domestic staff provide the immediate day to day cleaning service in wards and departments

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Cleaning Space

general

Users:
Staff



Notes:

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Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Equipment required depends on the type and proportion of floor coverings and finishes in the department served, and layout shown is based on the assumption that 70% of floor areas will be textile and 30% PVC.

2. If the restricted (bracketed) dimensions are used a workspace of 2900 x 1900 results, which becomes minimally acceptable if the corridor space outside the room is used as part of the workspace and for temporarily parking equipment and if the activities and sequences are strictly programmed to avoid two people working in the same room at the same time, i.e. principal activities do not occur concurrently and no additional equipment is introduced into the space.

Cleaning space – team/heavy duty

Definition

1. The cleaning spaceteam/heavy duty is a base from which the domestic staff provide day-to-day team/heavy duty cleaning services. It provides storage for equipment and materials and facilities for the various activities undertaken.

General points

2. The number of cleaning spacesteam/heavy duty will depend upon the size of the project and the extent of the service, but will not be less than one per hospital. The actual number will be dependant upon (i) the operational policy of domestic services and (ii) the compromise achieved between the need to locate spaces in close proximity to the areas served and the need to limit the number of such spaces to avoid duplication of space and equipment.

3. The type and number of items of equipment and materials to be stored is dependent upon the finishes used in the accommodation, numbers and deployment of staff and the frequency of cleaning. A number of items of equipment are large and require lifts or ramps for movement from floor to floor. Sufficient space must be available for manoeuvring and servicing of equipment, emptying and filling of machines and washing and drying of machine pad cloths. For the purposes of this Note it has been assumed that a central laundry is available for washing and drying of mop heads and other items. If it is not available, then provision of a washing machine and Tumble Drier – Stacked (B51AJ) will be required. It is assumed that cleaning machines for outdoor use, mobile cleaning platforms and ladders will be stored and maintained within the works department.

4. 'A' Sheet Y1502 outlines the basic requirements in line with the above assumptions. Equipment requirements will be dependent upon the finishes to be cleaned and the domestic services policy. Project teams should liaise closely with domestic services managers to ensure the correct selection. Selection of alternatives to 'A' Sheet Y1502 should normally be from items available under general contract and project teams in conjunction with domestic services managers should be aware of the items available in the Health Service Supply Purchasing Guide. Individual Health Building Notes will indicate which items of equipment are likely to be required for the finishes etc. considered to be appropriate for the department concerned.

5. Special facilities are required for the charging of lead batteries. It is essential, therefore, that such batteries are charged only in those areas specifically designed for that purpose.

6. Where large uncluttered areas of hard floor covering are provided, a combined scrubbing/drying machine should be considered.

Note: Drawings are not provided for this space.

6.6 Interview room/relatives; accommodation: day room/overnight stay

Space	'A' Sheet Code
Interview room/ relatives; accommodation	M0707
Day Room/Overnight Stay	D1302

Definition

1. These activity spaces are dual purpose. They perform the function of providing a space where confidential interviews may be held away from the clinical or official environment. They also meet the requirement to provide night or day accommodation for the relative(s) of seriously ill patients.

General points

Interview room

1. The interview room provides an environment where members of staff may hold confidential discussions with other members of staff, with patients or relatives, in circumstances where it is felt that it would be inappropriate to use office accommodation, for example interviewing, counselling etc.

2. Provision is made for a limited amount of desk work only as it is intended that such interviews should be held in the atmosphere of a sitting room rather than that of an office.

Relatives' accommodation

1. Relatives of seriously ill patients require a room where they can rest and wait. Planners should bear in mind that relatives may be awake most of the night and may need to sleep either by day or by night.

2. The furniture recommended enables these requirements to be met.

3. Consideration should be given to the provision of or access to sanitary facilities.

Note: Critical dimensions for these spaces are similar to those for offices except that space should also be provided for a couch or divan, clothes storage and personal washing facilities as specified on the A-Sheets.

6.7 Seminar room

Space	'A' Sheet Code
Seminar Room	
20 persons	H0501
Seminar room	
10 persons	H0503

Definition

1. An activity space which may be used for small conferences, discussions and tutorials on a formal or informal basis.

General points

2. Seminar rooms may be singular or in groups according to the locational requirements.

3. Full blackout facilities are rarely necessary but there should be some means of darkening the room when required. Where blackout facilities are used regularly for long periods, special attention must be given to the problems of ventilation.

4. Socket-outlets should be positioned so that overhead projectors, slide projectors and mobile X-ray illuminators etc. can be used with minimum danger from trailing cables.

5. The furniture and equipment in the seminar rooms should be project options according to the functional activities carried out in the rooms.

Note: Drawings are not provided for this space.

6.8 Offices

Space	'A' Sheet Code
Office 1	
General	M0101
Office 2	
Senior staff	M0106
Office 3	
All disciplines	M0201
Office 4	
Medical, doctor's office	M0305
Office 5	
Medical, head of division	M0306
Office 6	
Medical, 2 senior staff	M0307
Office 7	
Interview/overnight stay	M0802 & M0803

Definition

1. An activity space with facilities for the performance of tasks primarily involving desk work (including the use of a computer), paper storage, telephoning and interviewing.

General points

2. The facilities suggested should meet the requirements of a large range of health service staff with minor variations of loose equipment to meet specialised needs. Such variations would need to take account of specific requirements such as information display, reception of visitors, use of office machinery etc.

3. The range of sizes of office should be limited. Where it is felt appropriate to differentiate between status of occupants this should be achieved by variations of loose furniture rather than by office size. To this end it is suggested that, generally, offices should allow space for the regular occupant(s) and at least three other people for interview or discussion.

4. 'A' Sheet M0101 should meet the needs of the majority of health service staff although the type of desk may vary between a single and double pedestal unit. A drawing is only provided for office 1, general. For other types of office see below:

(a) M0201 is basically similar but includes the provision of a mirror.

(b) The accommodation for medical staff is similar to that of other disciplines but the need to take special note of requirements such as X-ray illuminators should be borne in mind.

(c) Where a member of staff regularly performs 'on call' duty, it may be appropriate to provide additional space and equipment to allow an office to perform the function of a bedroom. 'A' Sheets M0802 and M0803 indicate an acceptable level of provision, but reference should also be made to the section on interview rooms.

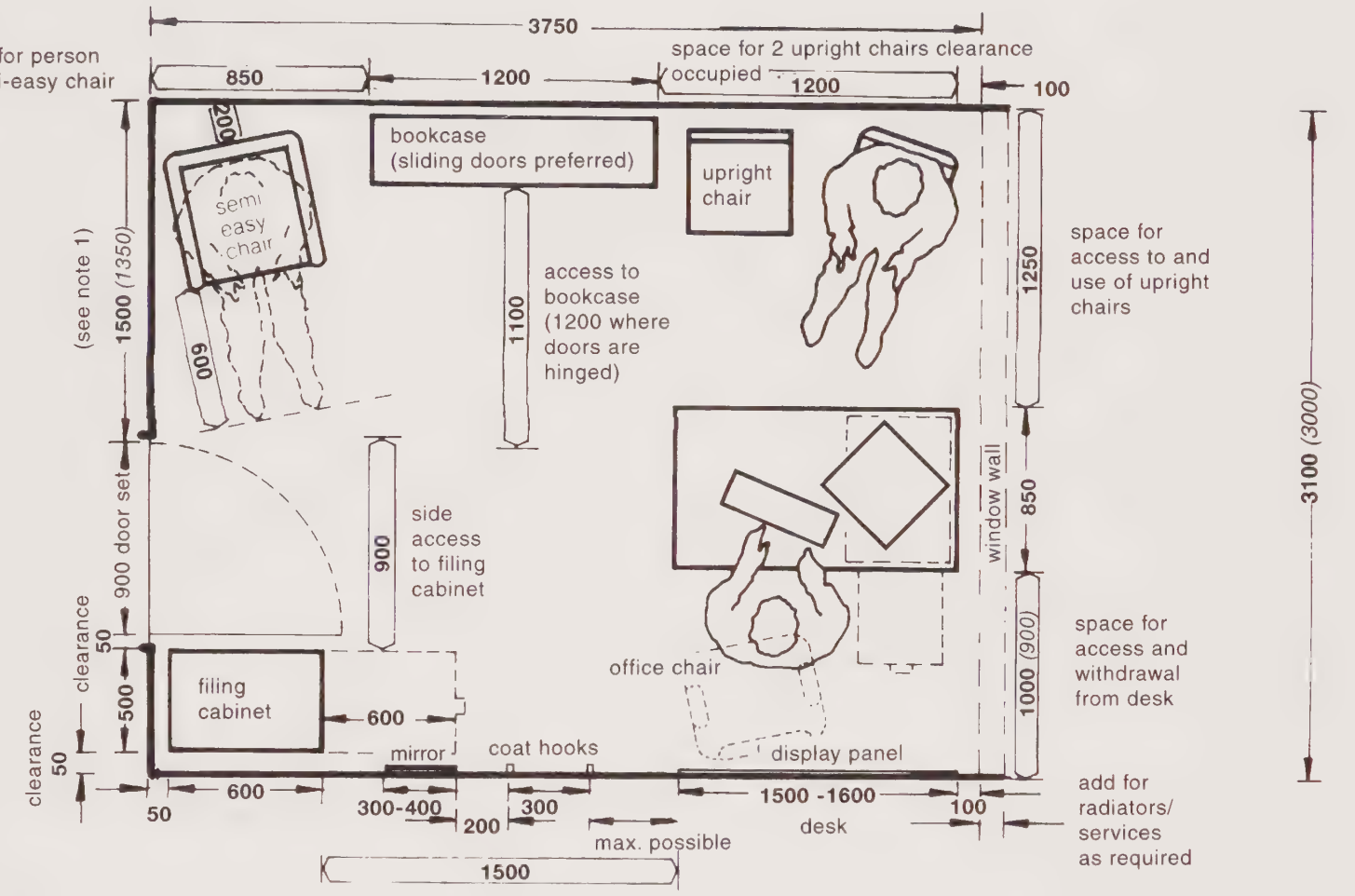
Activities:
Tasks involving desk work, use of a computer and printer, telephoning, paper storage and interviewing.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Office 1

General

Users:
Staff



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. 1500 is required to satisfactorily accommodate a semi-easy chair in this position. The restricted dimension of 1350 is acceptable if the chair is used in an angled position, but this will provide increased obstruction to bookcase access. This is acceptable where access is not required frequently.

2. The desk should not back onto a wall since this is fatiguing on the eyes. Neither should a window be behind the user since reflections and glare will be seen on the screen. The person with their back to the window may have their face in shadow making communication difficult for those with visual and hearing impairments.

3. The person at the desk should not have their back to the door for reasons of security and courtesy.

4. See also Desk 2 data sheet

6.9 Toilets

Definition

1. An activity space providing facilities to use a WC.

General

2. Where cubicle doors open inwards a clear space of 400 mm (300 mm) should always be maintained between the front edge of the WC and the furthest point of penetration of the door swing (that is, when open 90° for doors positioned in the front wall, or to leading joints where door is positioned in side wall of cubicle).

3. Although, when WC cubicle doors open outwards a reduction in cubicle length may be possible, an overall saving in space may not be effected as it may be necessary to provide more space outside the cubicle to accommodate the outward doorswing safely and to retain a satisfactory minimum level of circulation. Accommodating the doorswing inside the cubicle ensures more generous space for personal washing/adjusting clothing and more effective use of space. Outward opening doors are not therefore generally recommended for staff accommodation. Outward opening doors are however recommended for patient accommodation for reasons of emergency access and should be included in facilities for disabled staff.

4. It may be necessary to consider whether provision is adequate to meet the special needs of staff from particular ethnic groups if it is likely that there will be a number on the hospital staff.

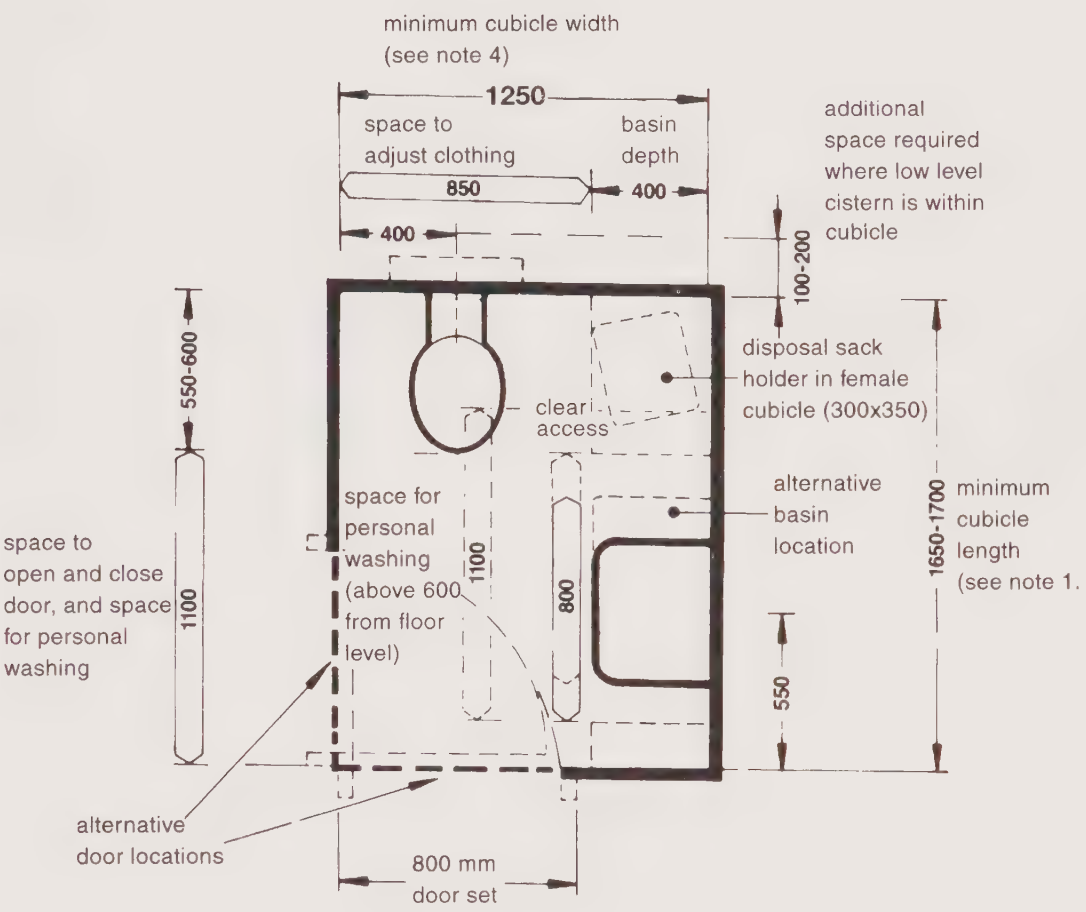
5. The provision of a separate fully enclosed room with an integral wash basin is usually to be preferred over the provision of a group of partially-enclosed WC cubicles leading off a common wash-room. Apart from being aesthetically more acceptable to most people, it allows flexibility in the assigning of WCs to men or women (or use by both) and enables the WCs to be dispersed if necessary.

Activities:
Use of WC and washbasin, male and female.

NHSEstates Ergonomic Data Bank
Component-user data sheet, not to scale

Toilets 1

Users:
Fully ambulant users



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Additional space required where low level cistern is within cubicle.

2. Where a handrinse facility is not available inside WC cubicle, one must be available outside.

3. Where the cubicle door opens outwards, the cubicle length may be reduced by 100 (300 max.). This may not however effect an overall saving as a space must be provided outside the cubicle, also the door swing should not obstruct space for circulation.

4. The cubicle width may be reduced to 1200 if a 350 deep washbasin is used.

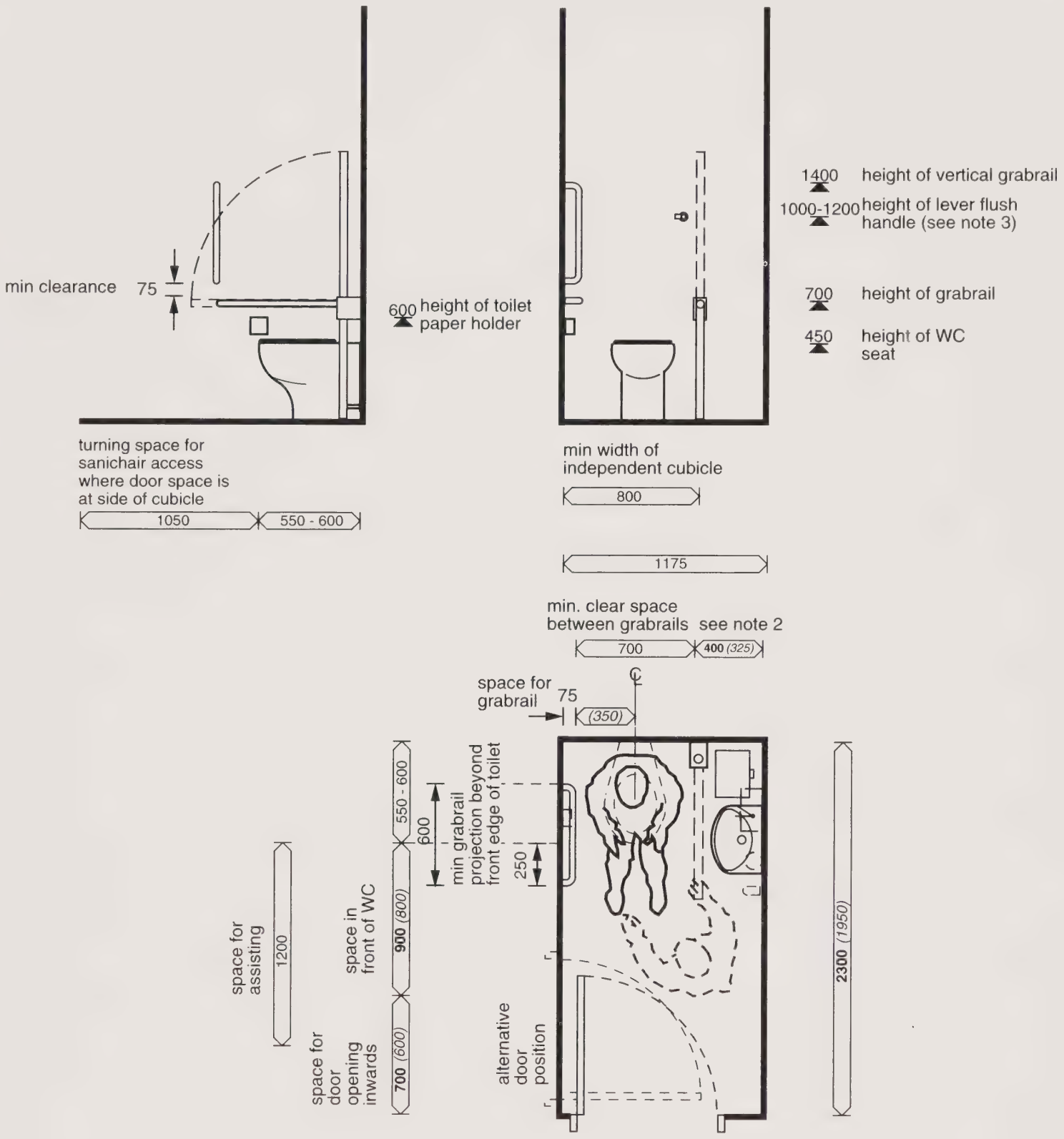
5. Floors should be slip resistant and in contrasting colour to the walls and WC. Floors should not be shiny or cause reflections or glare since this causes confusion for people with sight impairments.

Activities:
Use of WC and handrinse facilities with front access space for assistant.

NHSEstates Ergonomic Data Bank
Component-user data sheet, not to scale

Toilets 2

Users:
Ambulant, semi-ambulant, assisted or independent, (also sanitary chair users)



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. This layout allows space for entry with a child or bags etc. Where several unisex or ambulant WCs are provided they should be handed.

2. When the hinged grabrail is in the raised position, a dimension of 600 (rather than 400 (325) allows side access for assistant.

3. Flush handles below 1100 will obstruct positioning of a sanitary chair over the WC.

4. Floors should be slip resistant and in contrasting colour to the walls and WC. Floors should not be shiny or cause reflections or glare since this causes confusion for people with sight impairments. The colour or tone of the background should allow grabrails and sanitary fittings to be easily distinguished.

5. An alarm cord, reachable from the toilet/ basin and floor must be fitted.

6. Where assistance is minimal, the cubicle width can be reduced to 1100.

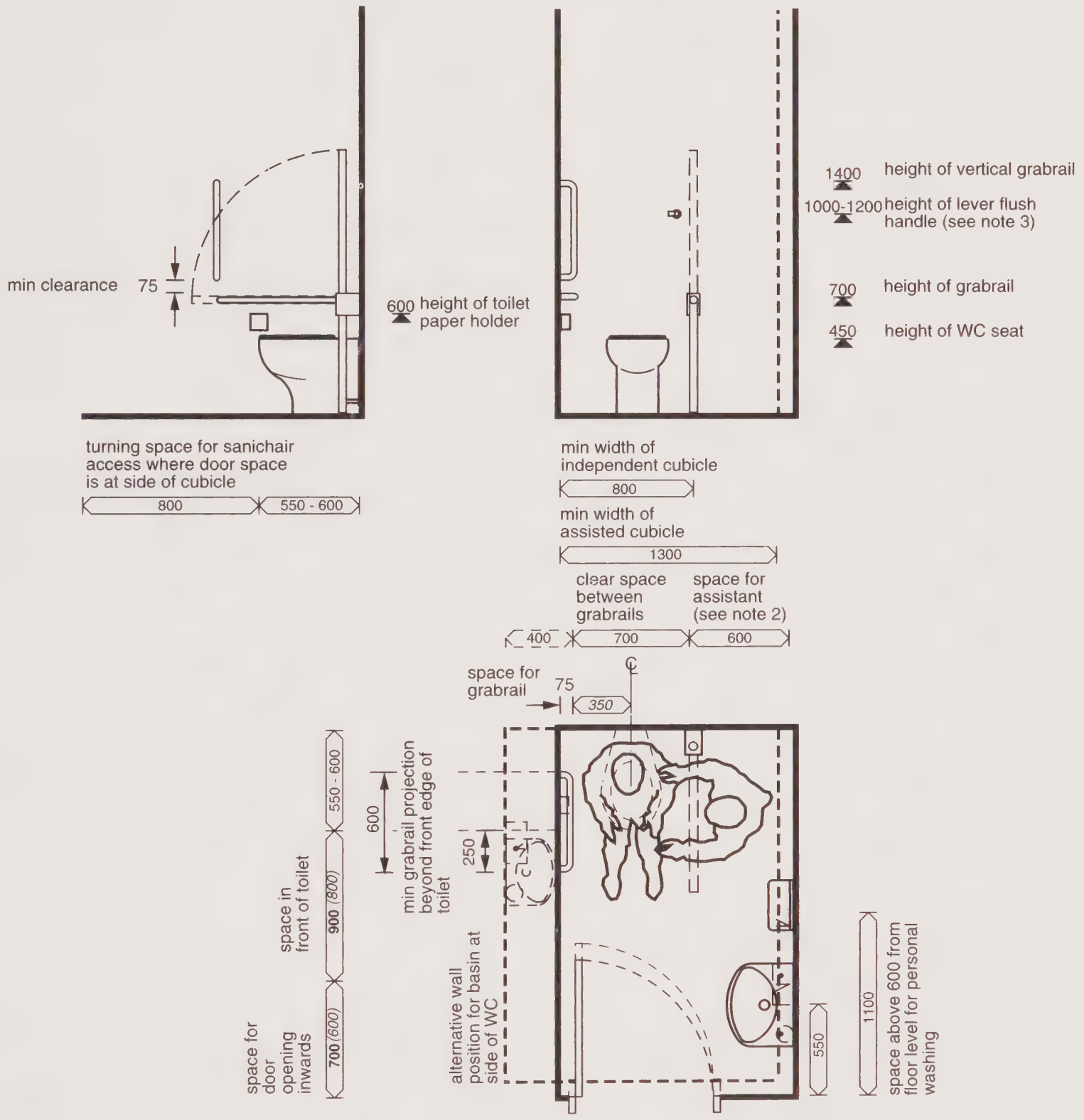
7. Side access to the WC for the assistant is generally preferred for semi-ambulant people. See Toilets 3.

Activities:
Use of WC and handrinse facilities with side access space for assistant.

NHSEstates Ergonomic Data Bank
Component-user data sheet, not to scale

Toilets 3

Users:
Ambulant, semi-ambulant, assisted or independent, (also sanitary chair users)



Notes:

1350 *(1300)*
Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. This layout allows space for entry with a child or bags etc. Where several unisex or ambulant WCs are provided they should be handed.

2. This allows side access when the hinged grabrail is in the raised position.

3. Flush handles below 1100 will obstruct positioning of a sanitary chair over the WC.

4. Floors should be slip resistant and in contrasting colour to the walls and WC. Floors should not be shiny or cause reflections or glare since this causes confusion for people with sight impairments. The colour or tone of the background should allow grabrails and sanitary fittings to be easily distinguished.

5. An alarm cord, reachable from the toilet/ basin and floor must be fitted.

Toilets

(Notes to ergonomic data sheets)

General points

1. The space/spaces required vary depending upon the range of users and components to be accommodated. The space allowed for activities should take into account the varying degrees of assistance that may be required, and the fact that some users may be relatively inexperienced at manoeuvring a wheelchair or using any other aid to mobility.

2. Disabled users of the building (whether patients, visitors or staff) should not have to travel further, or make more effort than other users, to use a toilet. Consideration should be given to whether the overall toilet provision is adequate for the needs of particular ethnic groups, if it is likely that there will be a significant number of users from any such group.

3. Accessible toilet facilities must be reached along fully accessible routes, and clearly indicated (see data sheets for 'Corridors' and 'Signposting' earlier in this volume).

4. Toilet facilities should not be located within lobby areas if at all possible, since their doors and confined spaces can be difficult for people with problems of mobility and hand function, also for those who use wheelchairs, to negotiate. However, privacy should always be maintained; toilet doors should therefore not open directly off busy circulation spaces, or the layout should be such that the open door does not give a view of the interior of the toilet. In assisted WCs where this is not possible, a curtain should be provided to ensure that the patient using the toilet cannot be seen from the adjacent corridor or activity space.

5. Toilet facilities for wheelchair users can be provided either on a "unisex" or "integral" basis. A "unisex" facility is approached separately from other sanitary accommodation; it has practical advantages, in that it is more easily identified, it permits assistance by a companion of either sex, and it can be used by others who require more space (such as those with a pushchair, child or guide dog). It is less demanding of space than an "integral" toilet facility, which effectively has to be duplicated in order to achieve the same level of provision for both sexes. (An "integral" facility is contained within each of the separate provisions for male and female users, thus precluding assistance from a companion of the opposite sex.)

6. Whether toilet compartments for wheelchair users are designed on a "unisex" or "integral" basis, they should be similar in layout and content, and should satisfy the following needs: to achieve necessary wheelchair manoeuvre; to allow for frontal, lateral, diagonal and backward transfer onto (and off) the toilet; to provide facilities for handwashing and hand drying within reach of the toilet, prior to transfer back onto the wheelchair; and to have sufficient space to allow a helper to assist in the transfer. Where more than one type of toilet is made available, it is suggested that mirrored unisex facilities would best meet the needs of individual preferences.

7. All fittings (toilet, basin, etc.) should be securely fixed, since people may need to lean on them or grip them for support.

Toilet

8. The shape of the toilet pan and bowl is important. Many wheelchair users and ambulant disabled people need to cleanse themselves while still sitting on the toilet, so it is useful if the pan offers a wide opening, and the water level should not be less than 200 mm from the rim. The toilet pan should be made of tough material, the pan fixing must be strong, and effective seat stabilisers are important. It is especially important to avoid any sharp edges and rough surfaces.

9. Some users will only be able to use one hand, so the toilet-paper dispenser must be within easy reach and should dispense individual sheets – or otherwise incorporate a locking device which allows sheets to be easily torn off with one hand.

10. Provision of a toilet lid will prevent use of the horizontal rail behind the pan.

11. A black or dark toilet seat should be fitted to a white ceramic WC unit, thus providing good colour contrast and helping the intended user to locate the facility.

Basin

12. The basin and soap dispenser should be positioned so that they can be reached while sitting on the toilet, and should be contrasted in colour and tone with the surface to which they are fixed. This will assist the visually-impaired, and will allow hands and other parts of the body to be washed before transferring back onto the wheelchair (thus avoiding the possibility of staining clothes or the wheelchair.)

13. Handrinse facilities vary from 350 mm to 450 mm in size. Basins which project for less than 300 mm tend to be very unsatisfactory in that they do not adequately contain splashing, whereas basins over 350 mm deep require an excessive sideways reach from the WC seat to access taps etc. Recessed basins are generally not favoured, because they tend to be too shallow and restrict access for – and movement of hands by – some disabled users.

14. To facilitate good access to the basin, the centre line of the bowl should not be forward of the front edge of the WC seat. Where the taps are positioned on the far side of the basin, the preferred location of the basin is set back between 200 mm and 250 mm from the front edge of the WC.

15. The towel dispenser must be within easy reach, to allow users to dry themselves.

16. Fittings such as toilet flush and taps should be equipped with lever handles, since these do not require the ability to grip and can even be operated using an elbow.

Bins

17. Some people may wear bags which need to be emptied into the toilet, or they may wear disposable colostomy/ileostomy bags or incontinence pads. A suitable sealed bin should be provided for the disposal of these; this must be positioned within easy reach of the toilet and where it does not obstruct circulation space.

18. A bin will also be required if paper towels are provided; paper or cloth towels (which do not require strength to pull) are preferred to hand dryers, which have limited application for people with disabilities.

Rails

19. Rails are used to provide support and stability when transferring, sitting down and standing up, and while adjusting clothing. The hinged fold-down rail is used in combination with a fixed wall rail by relatively independent users to provide support when lowering themselves onto the seat. Vertical rails are used for pulling back up to a standing position, and they are also important for a male standing to urinate when sticks and crutches have been discarded. (See the 'grabrails' data sheet earlier in this Volume.)

20. Grabrails must be positioned symmetrically over the toilet, and should be contrasting in colour and tone with the surface to which they are fixed. The 700 mm dimension allows access to the toilet by patients on wheeled sanitary chairs; this dimension must not be exceeded, since it will significantly reduce the effectiveness of the handrails as an aid to users.

Help call facility

21. An alarm cord, reachable from the toilet/basin area and the floor, must be fitted; it should be differentiated, both in colour/tone and diameter, from the light pull cord.

Floor and wall surfaces

22. Good lighting and colour contrasting between floors and walls, also between fixtures, walls and fittings such as toilet seats, enable those with impaired sight to use the facilities more easily and safely.

23. The floor must be non-slip, even when wet.

Doors

24. The leading edge of the door should be in the middle of the room, not the corner. The door should open out, but if inward opening is unavoidable the room depth must be increased to clear the door swing. It must be possible to open the door outwards in an emergency.

Minimum requirements

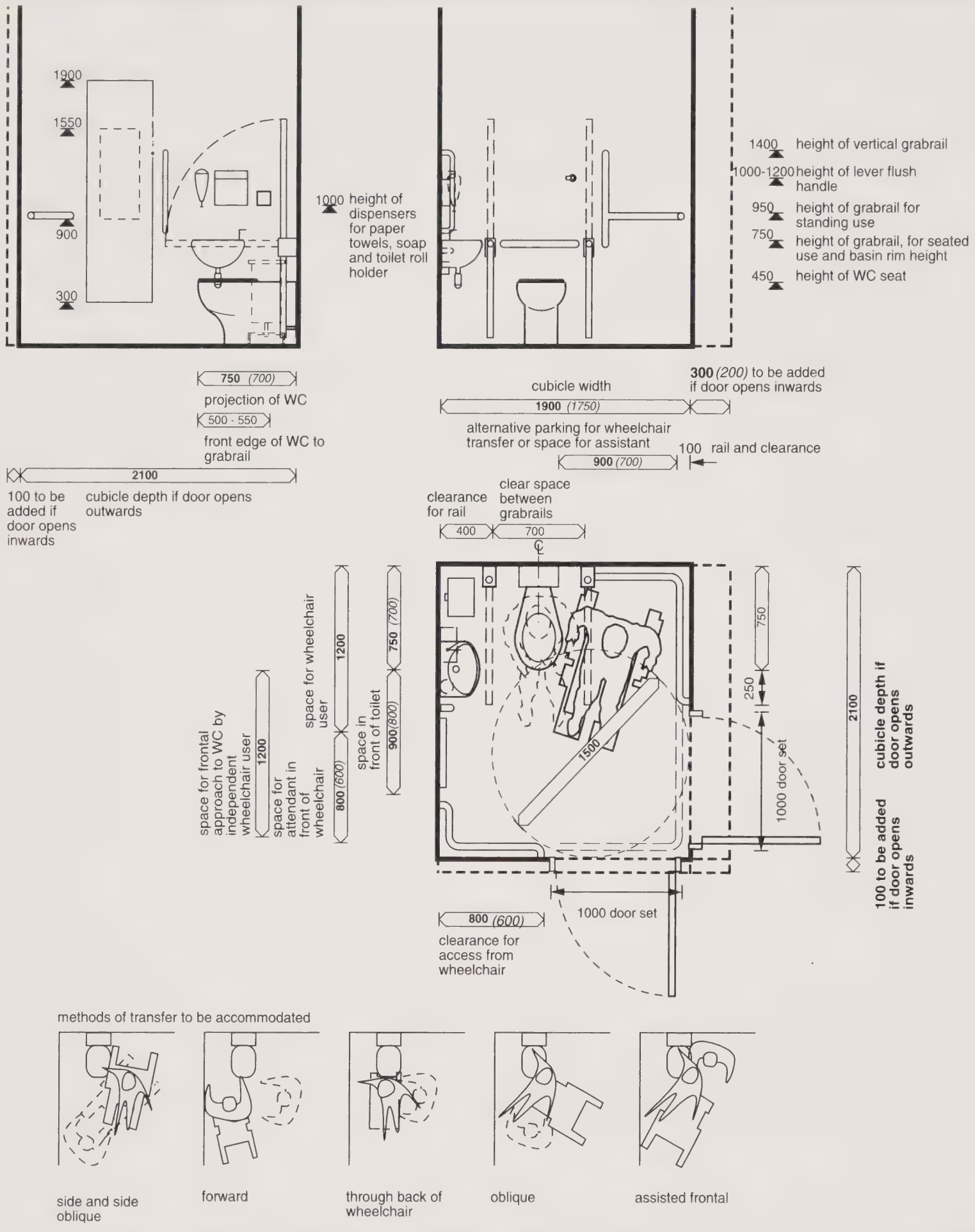
25. Compliance with Building Regulations 1991 in England and Wales is by designing to the minimum standards in Approved Document M. Compliance with the Building Standards (Scotland) Regulations 1990 is by meeting the requirements of Part T of the Technical Standards, which requires compliance with BS5810: 1979.

Activities:
Use of WC and handrinse facilities for wheelchair users and semi-ambulant people. Toilet can also be used as a specimen WC.

NHSEstates Ergonomic Data Bank
Component-user data sheet, not to scale

Toilets 4

Users:
Independent wheelchair users



methods of transfer to be accommodated

side and side oblique | forward | through back of wheelchair | oblique | assisted frontal

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

a. See notes for Toilets 4, 5 & 6 on separate page.

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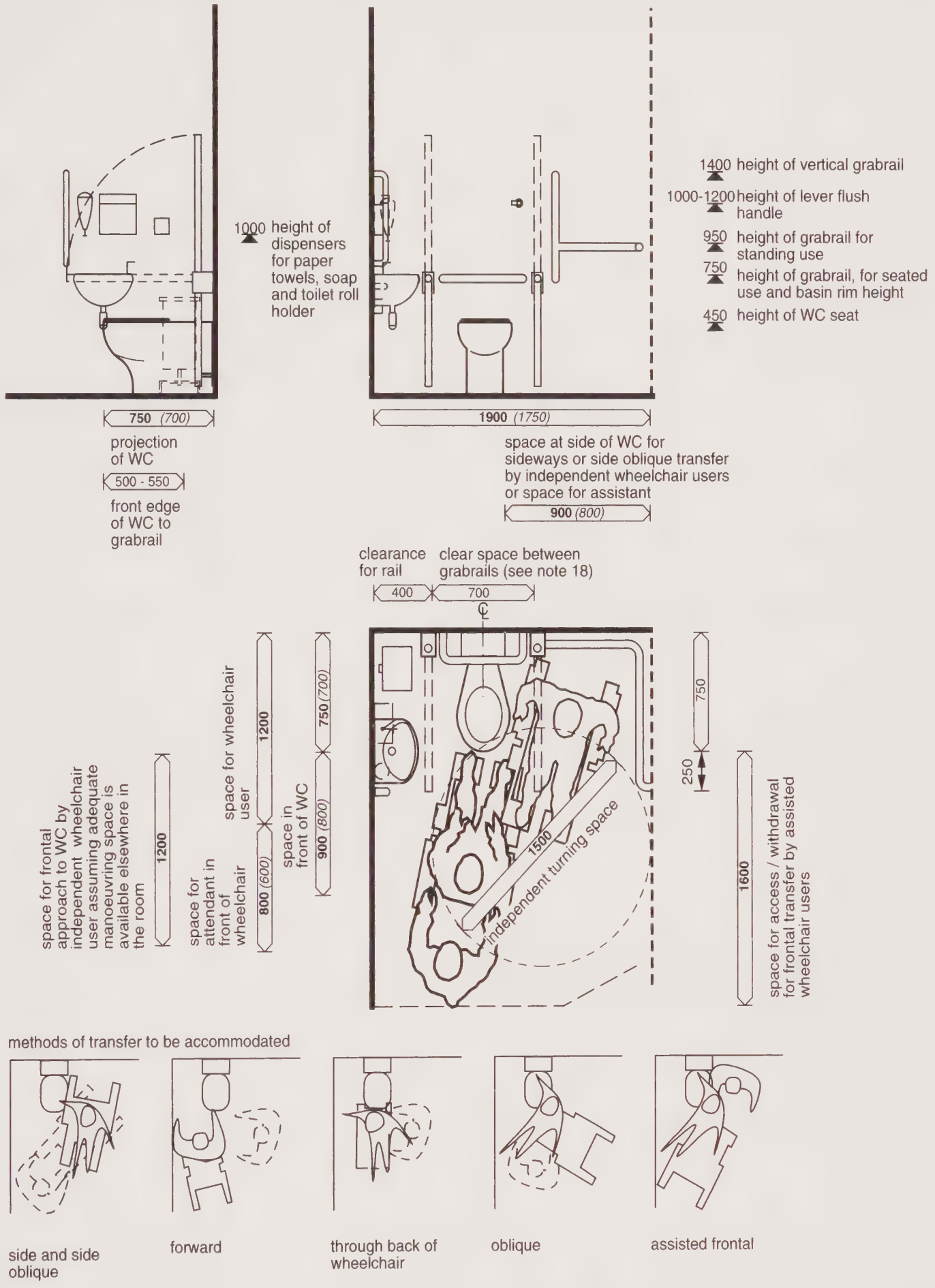
Activities:
Use of WC and handrinse facilities for wheelchair users and semi-ambulant people. Toilet can also be used as a specimen WC.

NHSEstates Ergonomic Data Bank
Component-user data sheet, not to scale

Toilets 5

Users:
Independent and assisted wheelchair users


1000 height of dispensers for paper towels, soap and toilet roll holder
1400 height of vertical grabrail
1000-1200 height of lever flush handle
950 height of grabrail for standing use
750 height of grabrail, for seated use and basin rim height
450 height of WC seat
750 (700)
projection of WC
500 - 550
front edge of WC to grabrail
1900 (1750)
space at side of WC for sideways or side oblique transfer by independent wheelchair users or space for assistant
900 (800)
clearance for rail
400
clear space between grabrails (see note 18)
700
space for frontal approach to WC by independent wheelchair user assuming adequate manoeuvring space is available elsewhere in the room
1200
space for attendant in front of wheelchair
800 (600)
space for wheelchair user
1200
space in front of WC
900 (800)
750 (700)
1500
independent turning space
250
750
1600
space for access / withdrawal for frontal transfer by assisted wheelchair users
methods of transfer to be accommodated
side and side oblique
forward
through back of wheelchair
oblique
assisted frontal

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

a. See notes for Toilets 4, 5 & 6 on separate page.

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6.10 Showers

Space	'A' Sheet code
Shower 1	
with WC, assisted	See Volume 2
Shower 2	
with WC, assisted	See Volume 2
Shower 3	
with WC and bidet, assisted	See Volume 2
Shower 4	
with basin,	
Fully ambulant	

Definition

Shower – ambulant patient

1. An activity space with facilities for an ambulant patient, who may require minimal assistance, to shower and use a washbasin.

Shower – assisted patient

2. An activity space with facilities for a patient, who may be in a wheelchair or sanitary chair, needing the help of staff to shower and use a washbasin from a seated position. This facility will also be suitable for independent wheelchair users.

Shower – fully ambulant (staff)

3. An activity space with facilities for staff to shower.

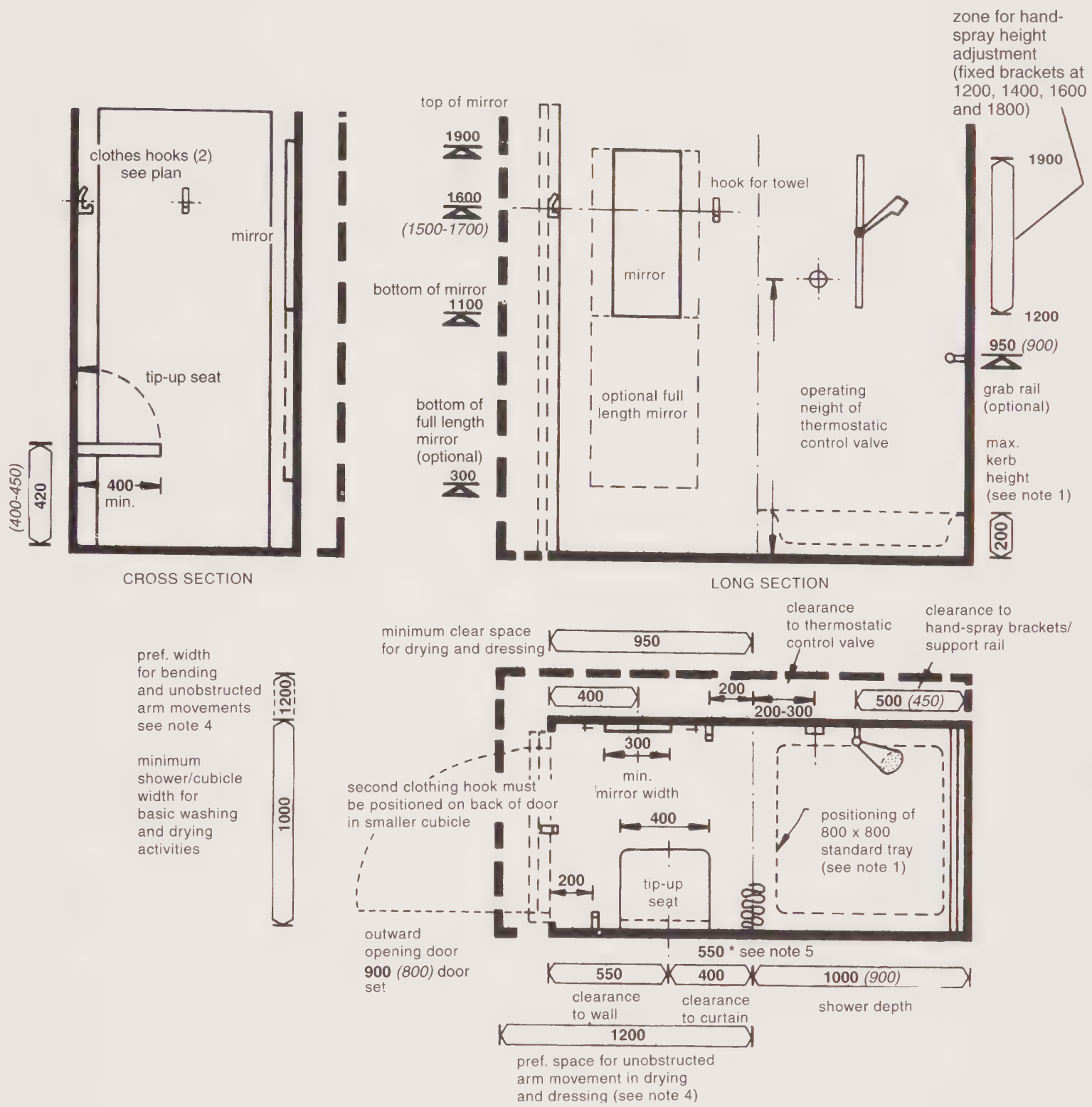
Note: Drawings are included in this volume for shower 4 only.

Activities:
Showering including undressing, drying and dressing.

Shower 4

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Users:
Fully ambulant



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. A shower without a deep tray or kerb is preferred, but may be necessary for satisfactory drainage or to avoid flooding of drying/dressing area.

2. Access to control valve must be possible without need to reach through potentially hot spray. Flexible hose outlet should also be carefully specified so as not to impede access to control valve.

3. A grab rail inside the shower area is not essential but is highly recommended in all showers, irrespective of category of user in view of danger of slipping on wet surfaces. Non-slip finish to shower tray is essential.

4. This plan shows a satisfactory basic shower facility. However, where soiling is severe and body cleansing requires bending and a wider range of unimpeded arm movements, a larger cubicle (shown dotted) is recommended.

5. Where shower curtain is replaced with a 'solid' screen, then clearance to centre of seat must be increased to 550mm.

6.11 Components

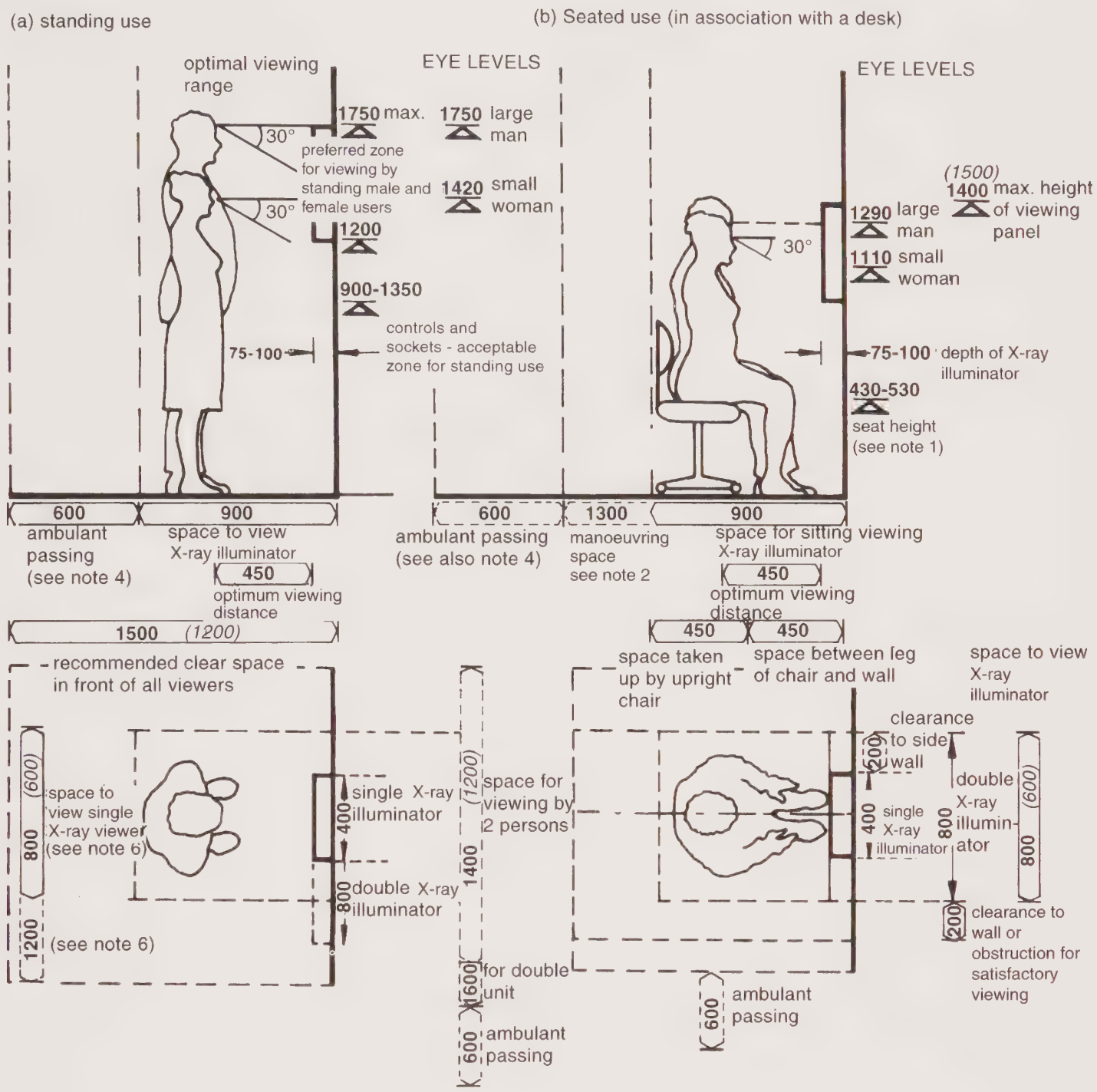
This section contains a selection of component-user data sheets relating to commonly occurring components. The data sheets give dimensional and other ergonomic information about the use of individual components.

Activities:
Viewing films using wall mounted (or mobile - see note 5) X-ray illuminator. (Standing and seated use.)

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

X-ray Illuminator

Users:
Male and female staff



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Seat height should be adjustable as chair will be used in association with fixed-height desk.

2. This dimension accommodates upright chair plus restricted leg space (450) to achieve optimum viewing distance of 450. Width of space to use desk or to manoeuvre swivel chair is essentially greater than this.

3. Size of X-ray film is 430 x 355. Some illuminators may exhibit more than one film. Typical dimensions: 400 x 600 x 100 - single wall mounted.

550 x 800 x 100 - double wall mounted.

700 x 700 x 225 - double wall recessed.

Within the unit are incorporated controls, which will vary in location according to manufacturer. These are generally located below the film illuminator.

4. If ambulant passing needs to accommodate space for person carrying film cassettes, this space needs to be increased to 800.

5. X-ray illuminators on mobile stands generally relate to standing use only, therefore the height recommendations shown at (a) above will apply. The depth of space to use mobile components will however need to be increased by 300 - 400 to accommodate the supporting base also some additional width of space will be needed to manoeuvre the stand into position prior to use: 1000 (900) for single units, 1300 (1200) for double units.

6. It is preferable that all viewers for standing use should accommodate simultaneous viewing by 2 persons within the width recommended for a single unit, but this restricts approach. 1600 - 1800 is preferable for comfortable use in busy areas.

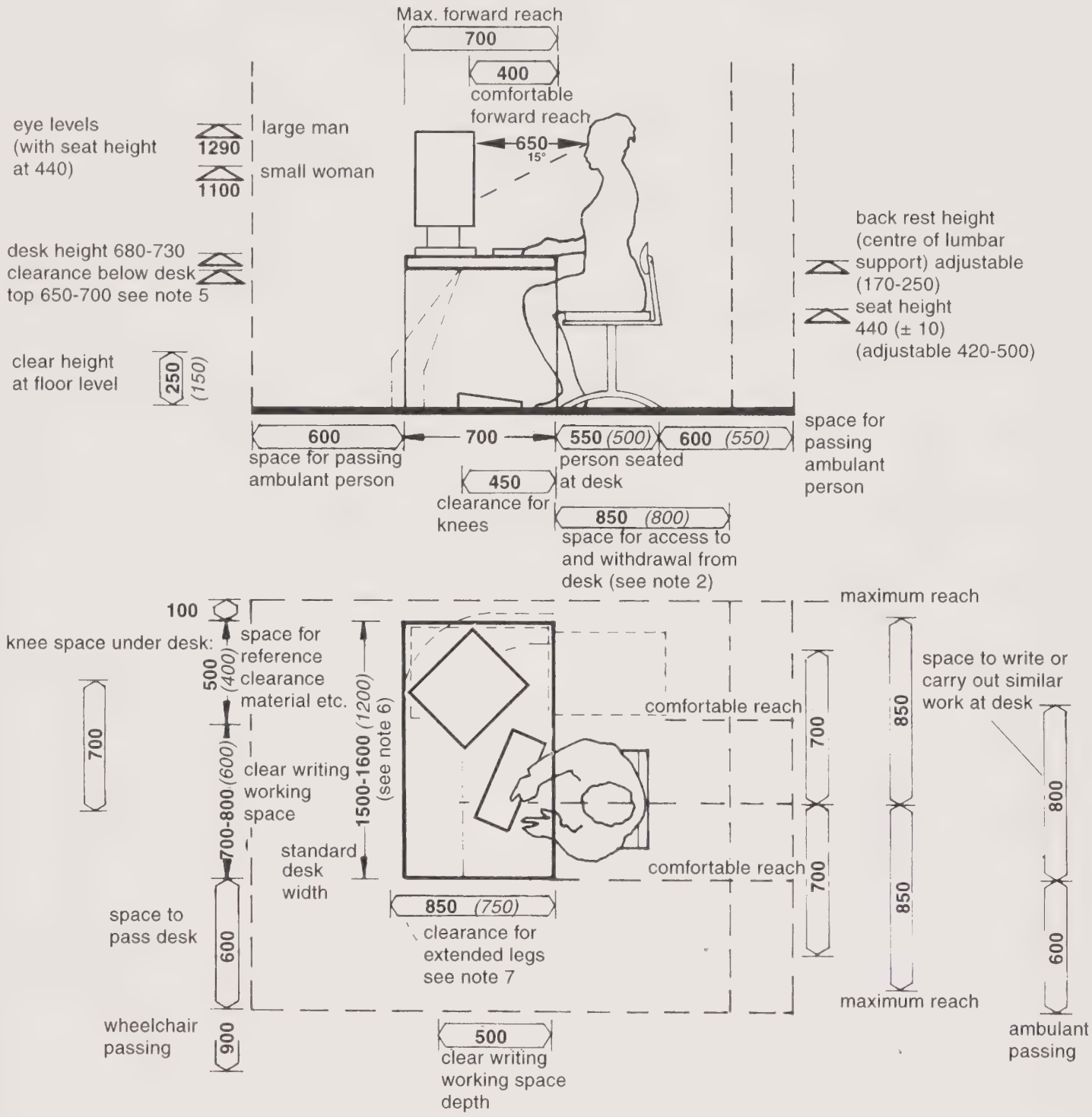
Activities:
Writing, using a computer screen and keyboard, administration, answering telephone.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Desk 2

single pedestal
1200 x 700 (1500 x 800)

Users:
Staff



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. See also BS 5940: Part 1: 1980

2. 900-1000 will be required for upholstered and heavily upholstered chairs respectively.

3. All papers and work implements frequently accessed e.g. telephones, should be placed within comfortable reach.

4. Items used less often should be capable of being grouped / placed within the limit for maximum reach.

5. A desk height of 730 is satisfactory for writing or only occasional typing. For frequent and prolonged keyboard use a desk height of 680 is required. Desk thickness should not be more than 30 since this prevents sitting with the thighs under the desk.

6. A desk width of 1500-1600 is preferred when computing and writing both take place frequently to allow adequate space for papers and for tasks to be carried out.

7. A desk depth of 850 is preferred where a computer is used to allow the recommended distance of 650 between the screen and user's eyes. This also allows adequate space for keyboard, papers etc.

8. A footrest should be provided.

9. Ideally the desk should not back onto a wall since this is fatiguing on the eyes. Neither should a window be behind the user since reflections and glare will be seen on the screen.

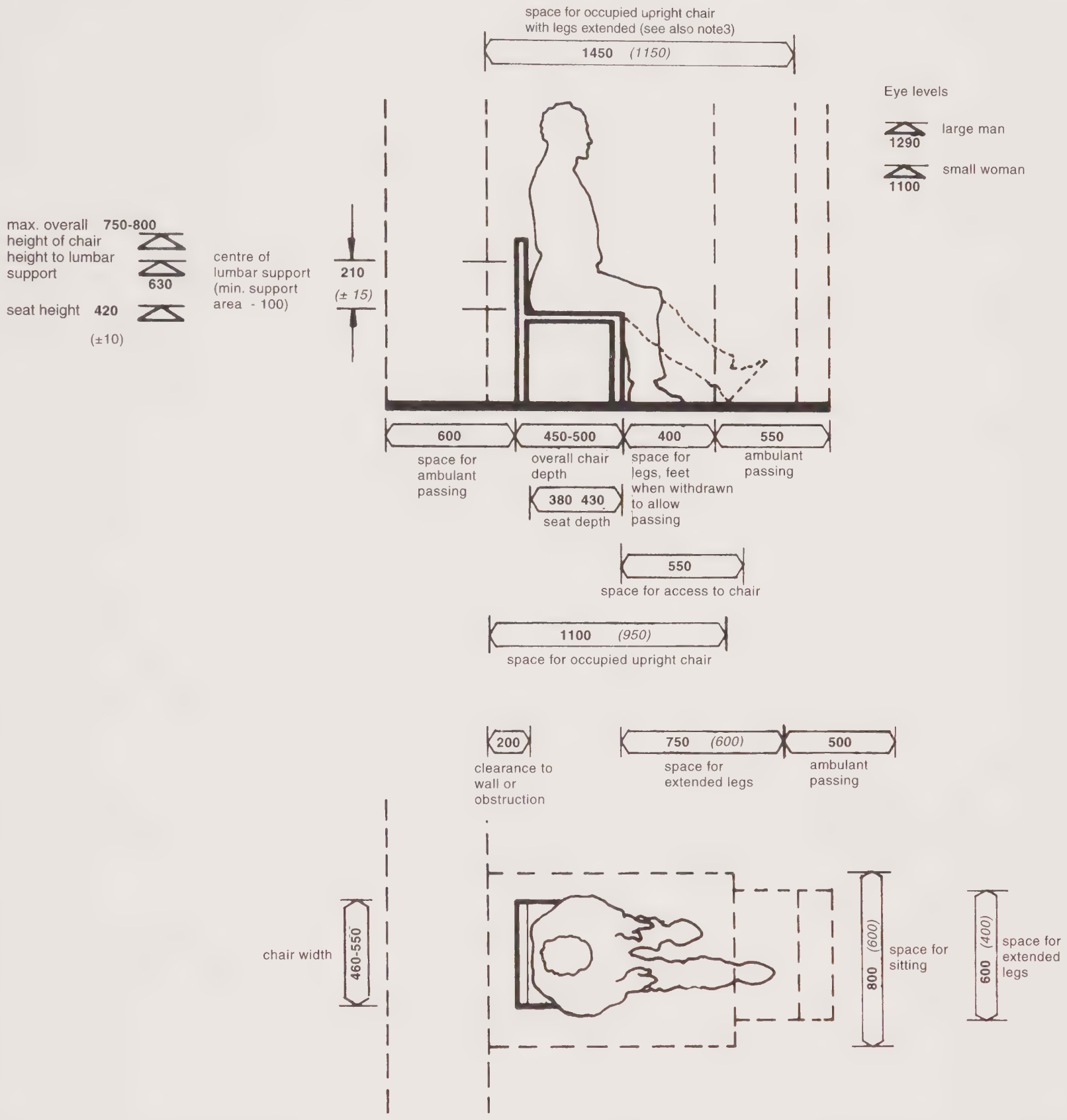
Activities:
Sitting

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Chair 1

Upright

Users:
Fully ambulant



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Maximum angle of seat plane 5° (3° preferred). The edge of the seat should be rounded.

2. Ergonomic objectives for chair:

a) Shod feet should be flat on the floor with no pressure at front of seat between seating surface and thighs.

b) Front edge of seat must not impose pressure on back of legs, i.e. seat length must be adequate but not too long.

c) The chair should provide a firm back support in the lumbar region but below the shoulder blades.

d) Preferably there should also be adequate clearance between the backrest and seat to allow free movement of the buttocks.

e) The space under the seat should be sufficient to allow the feet to be placed under the chair to assist the change from seated to standing position.

3. Space for occupied upright chair with legs extended should be 1450 (1150). Restricted space for visitor, in front of table or desk 1150 but 1250 preferred.

4. See also BS 5940: Part 1: 1980.

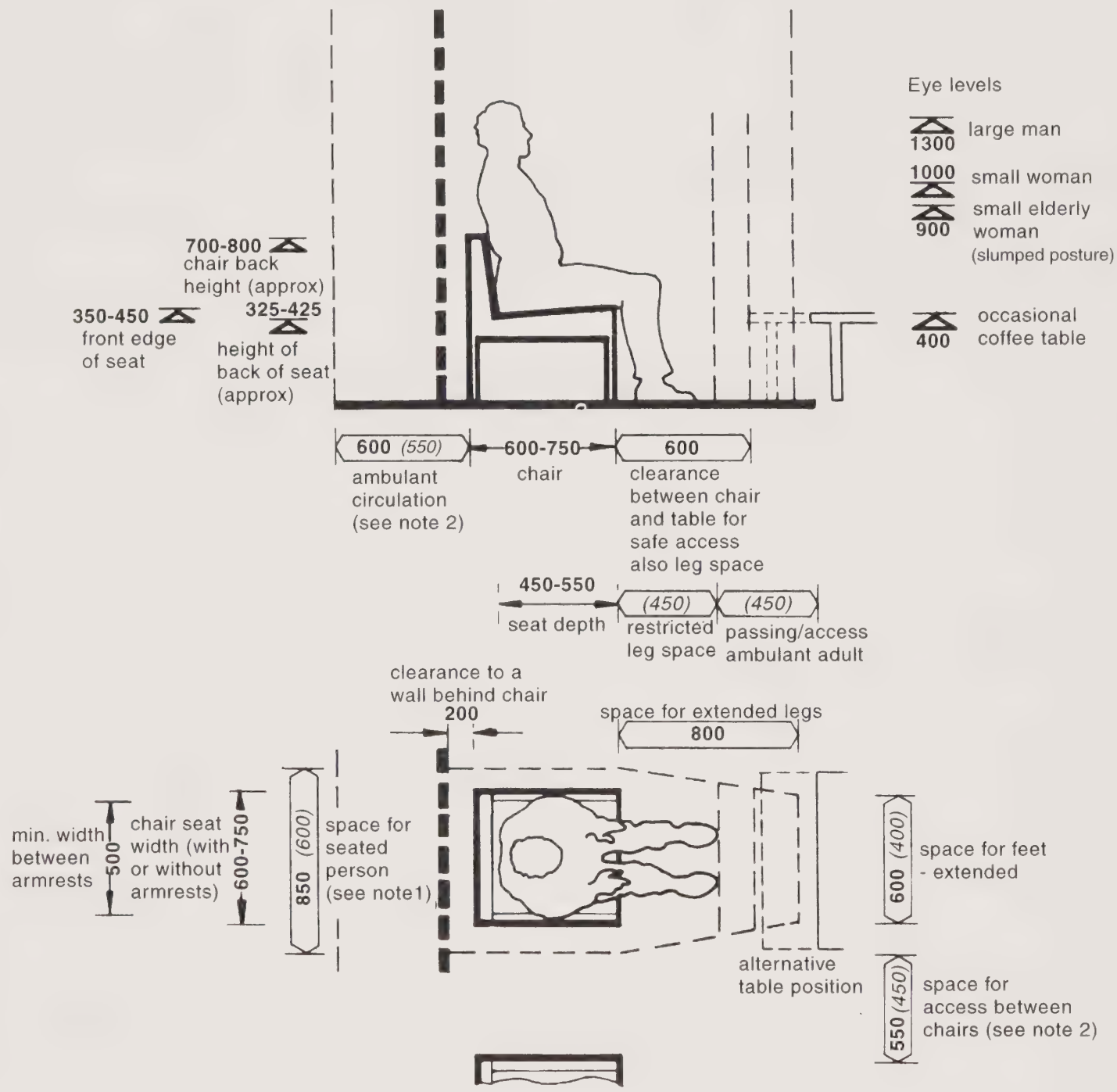
Activities:
Sitting, relaxing, drinking coffee, reading, informal discussion, etc.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Chair 4

Semi-easy, low back with or without arms

Users:
Fully ambulant adults


Eye levels
1300 large man
1000 small woman
900 small elderly woman (slumped posture)
400 occasional coffee table
700-800 chair back height (approx)
350-450 front edge of seat
325-425 height of back of seat (approx)
600 (550) ambulant circulation (see note 2)
600-750 chair
600 clearance between chair and table for safe access also leg space
450-550 seat depth
(450) restricted leg space
(450) passing/access ambulant adult
clearance to a wall behind chair 200
space for extended legs 800
min. width between armrests 500
chair seat width (with or without armrests) 600-750
850 (600) space for seated person (see note1)
alternative table position
600 (400) space for feet - extended
550 (450) space for access between chairs (see note 2)

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. When seats are pushed close together to form rows the average user space dimensions of 750 for seats with arms and 650 for seats without arms should be used.

2. 800 is the minimum dimension to accommodate circulation by patients using sticks or other walking aids.

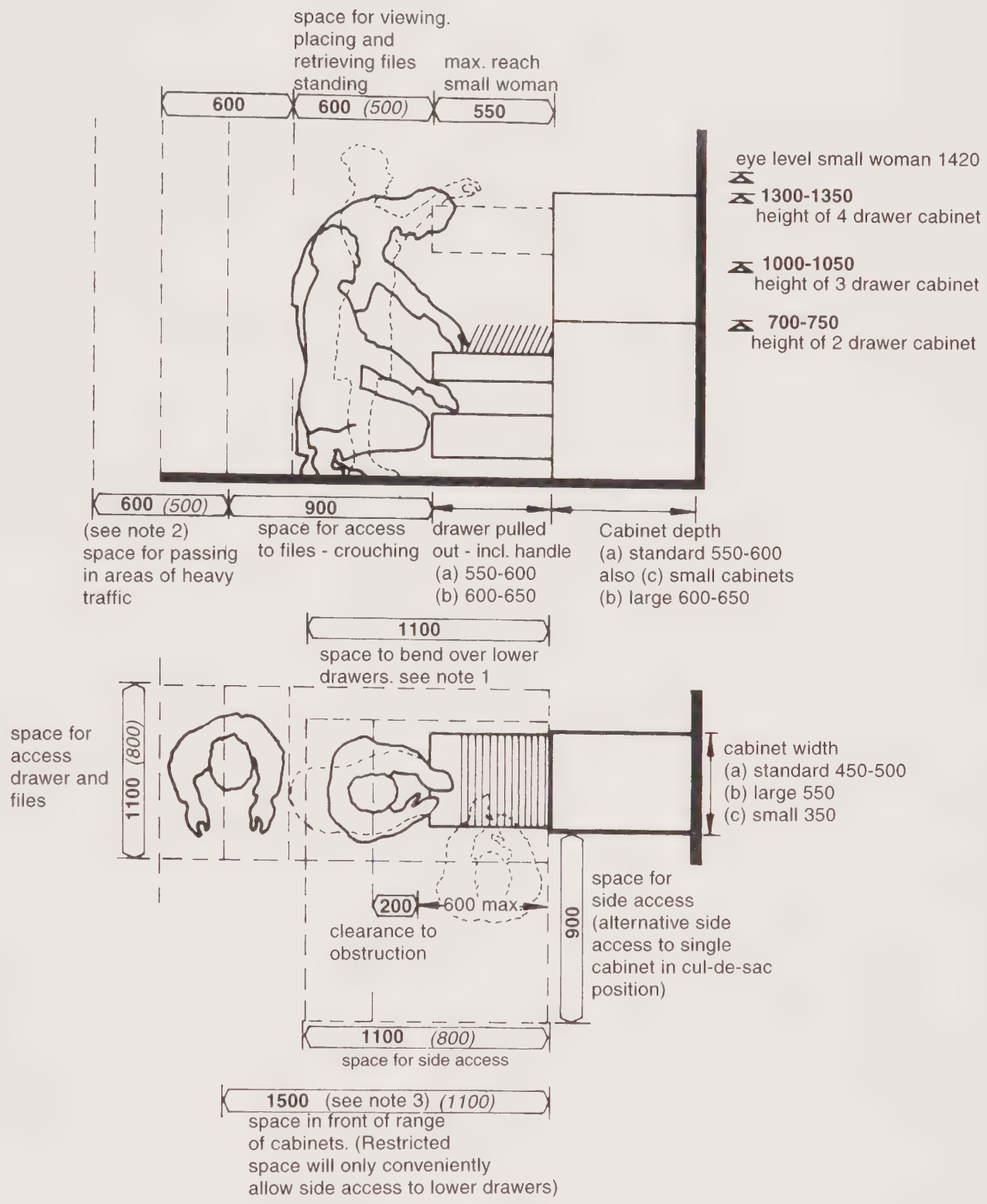
Activities:
Viewing, placing and retrieving files.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Filing Cabinet 1

2, 3 or 4 drawer with suspended files

Users:
Staff including wheelchair users



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Additional space for bending access to lower drawers is not required as this is satisfactorily accommodated over the space for pull out drawer. Space in front of cabinet should however be not less than 1100 to allow bending access to drawers.

2. This would apply to major circulation routes in large open plan offices.

3. Wheelchair users can readily access the second and third drawers. The top drawer in a 4 drawer cabinet is not accessible to a person in a wheelchair. Files in the bottom drawer of a cabinet are accessible, but some difficulty may be experienced in opening this drawer unless the handle position is modified. A 1500 clear space in front of the cabinet is also desirable for wheelchair turning.

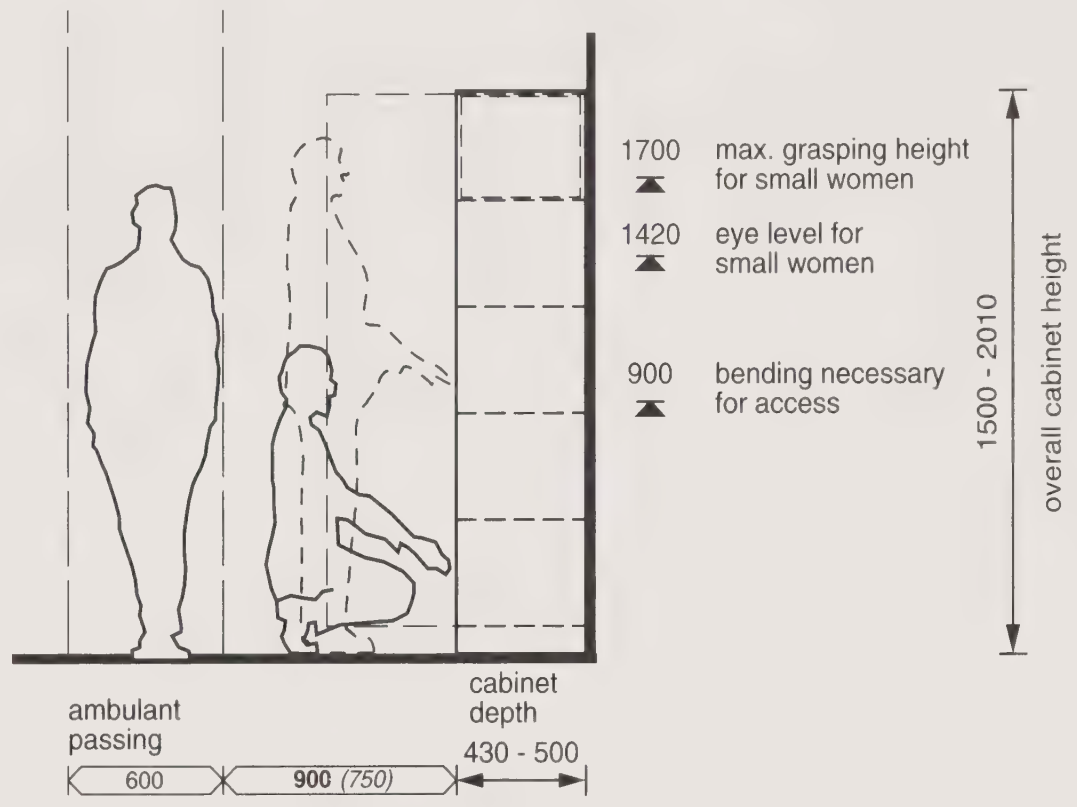
Activities:
Viewing, placing and retrieving files.

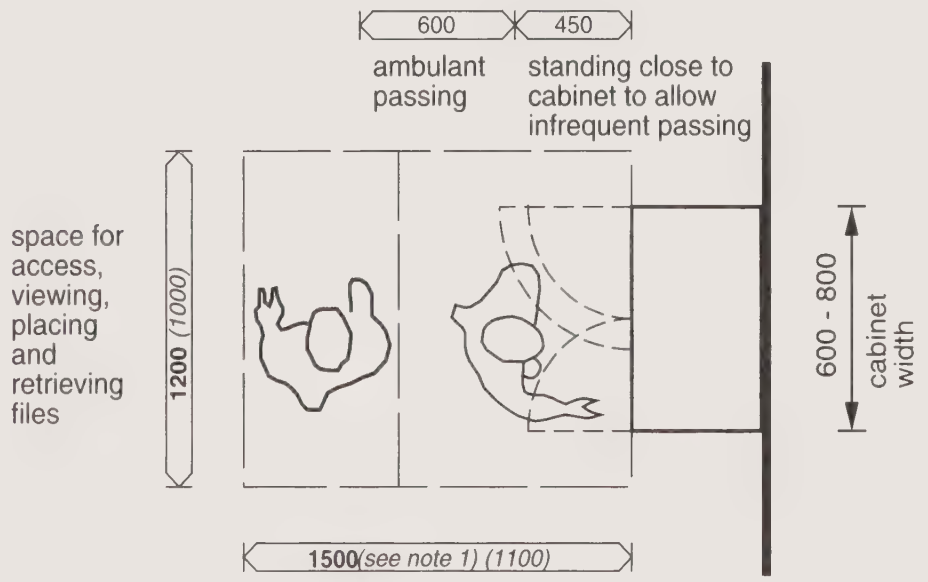
NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Filing Cabinet 2

3 or 5 rails of laterally suspended files

Users:
Staff, fully and semi-ambulant and occasionally wheelchair users





Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Wheelchair users can access the first three lower rails. The top rail in a 5 rail cabinet will not be accessible to a person in a wheelchair and the fourth rail may only be reached with difficulty. The files on the bottom rail may be accessible but the labels will not be readable. A 1500 clear space in front of the cabinet is desirable for wheelchair turning.

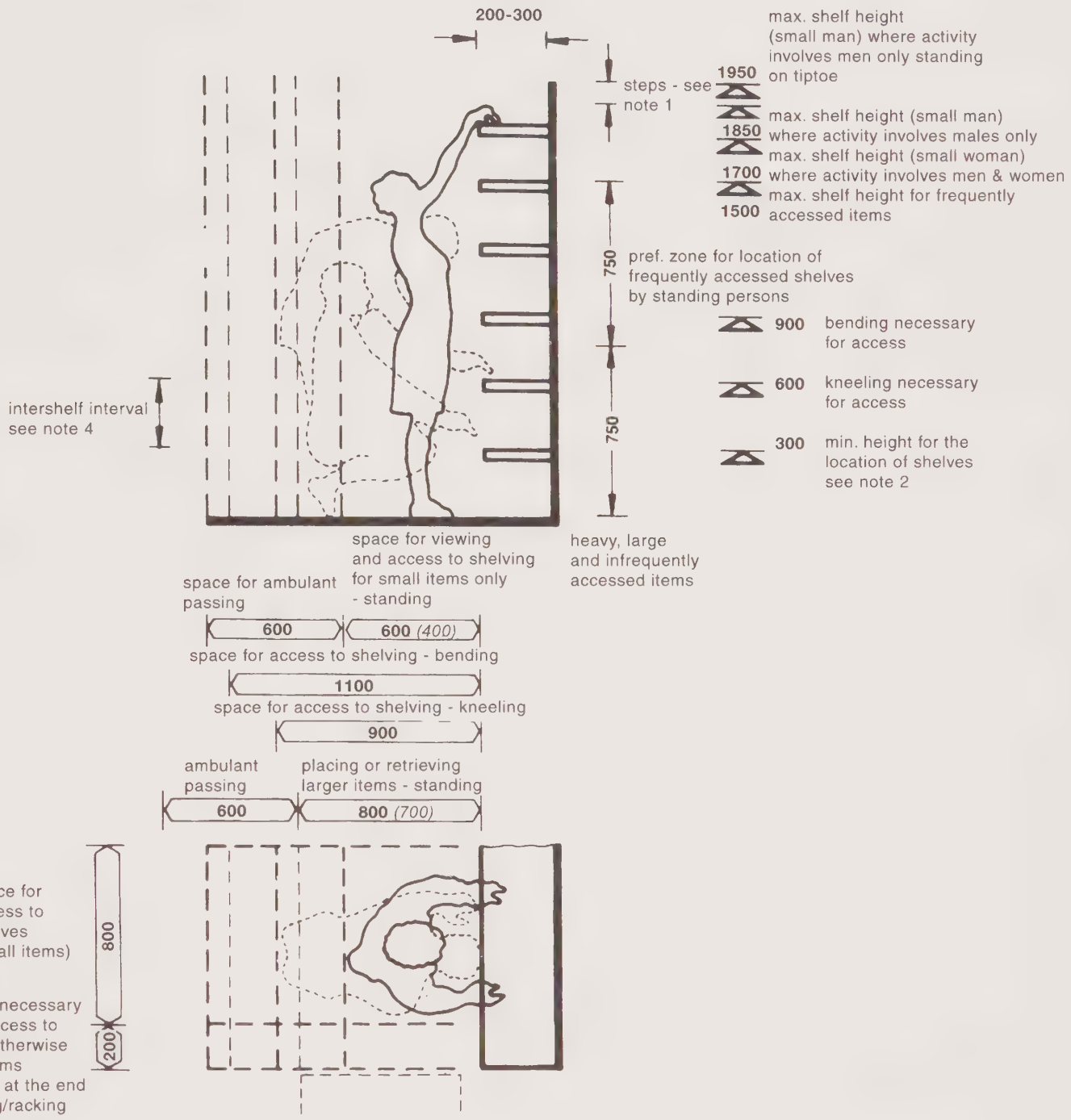
Activities:
Storage. Placing or retrieving items.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Shelving 1

racking, 200-300 deep

Users:
Fully ambulant


200-300
steps - see note 1
1950
max. shelf height (small man) where activity involves men only standing on tiptoe
1850
max. shelf height (small man) where activity involves males only
1700
max. shelf height (small woman) where activity involves men & women
1500
max. shelf height for frequently accessed items
750
pref. zone for location of frequently accessed shelves by standing persons
750
900
bending necessary for access
600
kneeling necessary for access
300
min. height for the location of shelves see note 2
intershelf interval see note 4
space for viewing and access to shelving for small items only - standing
heavy, large and infrequently accessed items
space for ambulant passing
600
600 (400)
space for access to shelving - bending
1100
space for access to shelving - kneeling
900
ambulant passing
600
placing or retrieving larger items - standing
800 (700)
space for access to shelves (small items)
800
clearance necessary for safe access to heavy or otherwise difficult items positioned at the end of shelving/racking
200

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Steps are required by an increasing number of users above 1700, and by most users above 1850. Steps are recommended for all users above 1950 (shelves at this height are NOT recommended for normal use - suitable for light and very infrequently accessed items only).

2. Also recommended minimum height for handles or lifting aids on larger items stored on shelves below 300, above floor level, or on the floor.

3. Shelf heights and dimensions must be related to the size and weight of items stored and also to the frequency with which they will be handled. Frequently used small items should be stored at or near worktop height. Heavy objects preferably at waist height. Maximum height for frequently accessed items - 1500.

4. It is assumed in all cases that reach into shelves will not be unduly obstructed by the inter shelf interval. The inter shelf interval for fixed or adjustable shelving should preferably be not less than the depth of the shelf (except where items are stored in trays or drawers).

5. It is also assumed that items stored will be proportional in size to shelf depth. (It cannot be recommended that small items be stored on deep shelves).

6. Maximum heights refer to shelves where the items stored are lightweight, of a size that can be easily handled and are accessed infrequently.

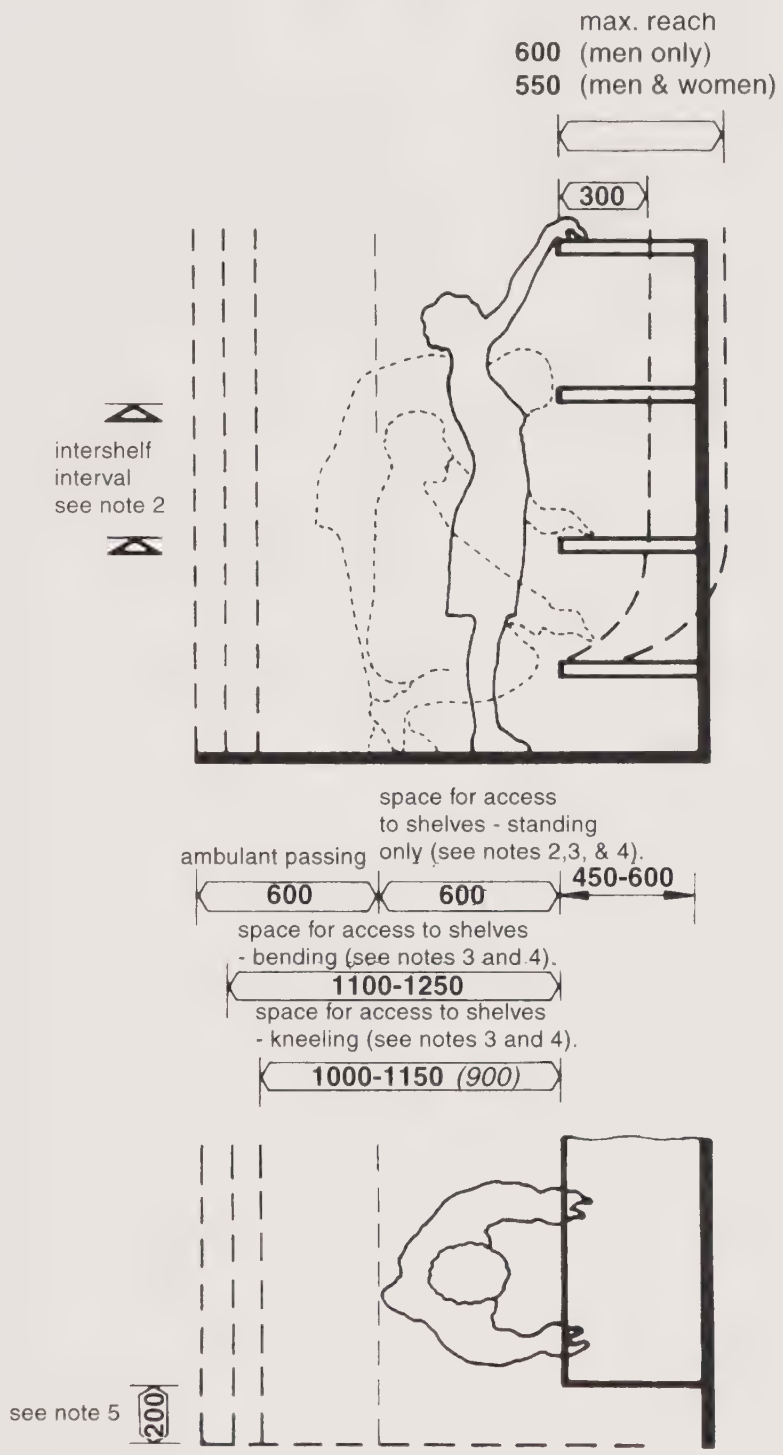
Activities:
Storage. Placing or retrieving items.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Shelving 2

racking, 450-600 deep access to one or both sides

Users:
Fully ambulant


max. reach
600 (men only)
550 (men & women)
300
intershelf interval see note 2
space for access to shelves - standing only (see notes 2,3, & 4).
ambulant passing
600
600
450-600
space for access to shelves - bending (see notes 3 and 4).
1100-1250
space for access to shelves - kneeling (see notes 3 and 4).
1000-1150 (900)
see note 5
200

max. shelf height for reach to front edge where men only are involved

1850

1700 max. shelf height where both men and women are involved

1500 steps will be required by almost all users to reach into shelves higher than this

1350 max. shelf height which allows full forward or sideways reach into shelf where men only are involved

1250 max. shelf height which allows full forward or sideways reach into shelf where both women and men are involved

700 reach into shelf becomes increasingly more difficult below this

300 min. height for location of shelves carrying small items. Also min. height for handles of lifting aids. No larger items should be stored below 300 (such items are also preferably pulled out before being lifted)

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Shelf heights and dimensions must be related to the size and weight of the items stored, also to the frequency with which they will be handled. Frequently used small items should be stored at or near worktop height, heavy objects preferably below.

Maximum height for frequently accessed items - 1500.

2. It is assumed in all cases that reach into shelves will not be unduly obstructed by the intershelf interval. The intershelf interval for fixed or adjustable shelving should preferably be not less than the depth of the shelf (except where items are stored in trays or drawers).

3. It is also assumed that items stored will be proportional in size to shelf depth. (It cannot be recommended that small items be stored on deep shelves).

4. Access space must take account of object size. Access recommendations are for 450 deep shelves and must be increased proportionately for shelves of greater depth. Where items are very heavy access space may need to be increased by 400 - 500.

5. Clearance for safe access to heavy or otherwise difficult items, located at the end of shelf or rack (assuming its width of 300 - items that are wider will not necessarily require a greater clearance).

6. Maximum heights refer to shelves where the items stored are lightweight, of a size that can be easily handled and are preferably accessed infrequently.

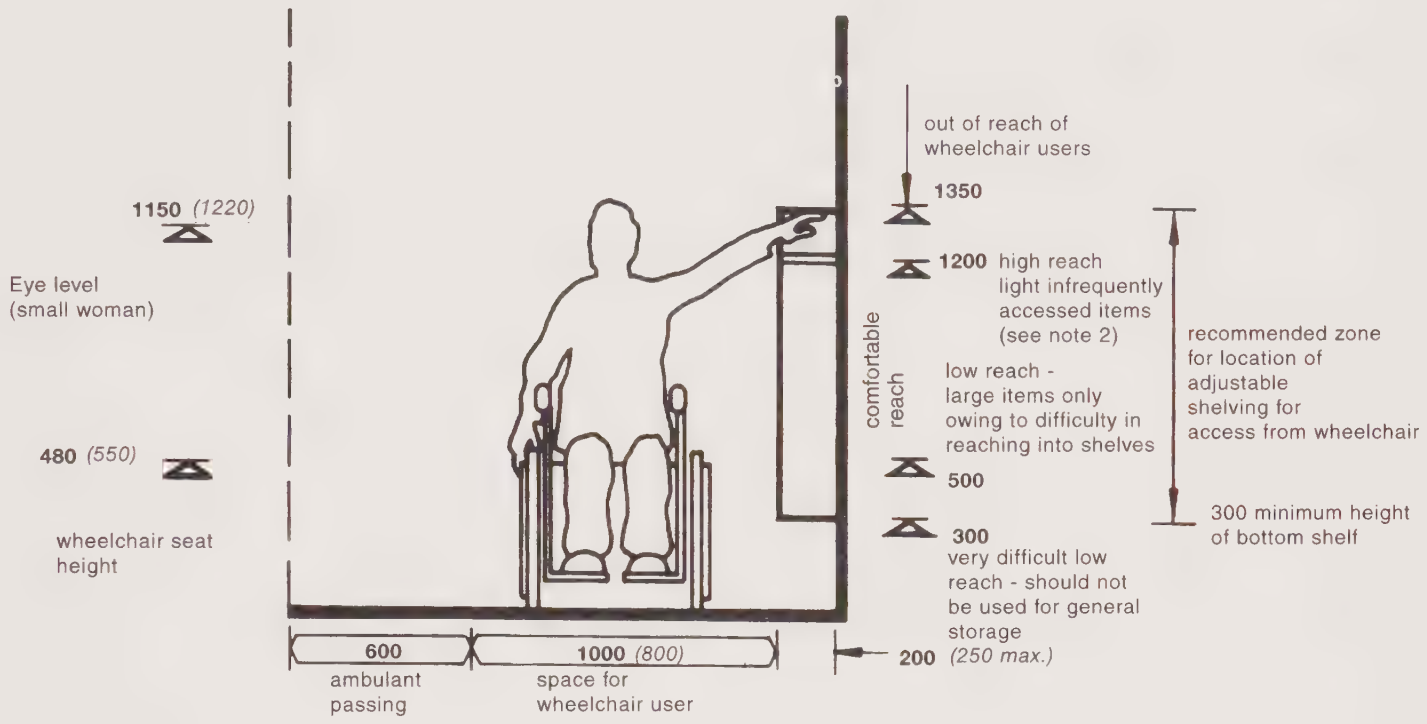
Activities:
Placing or retrieving items on shelves.

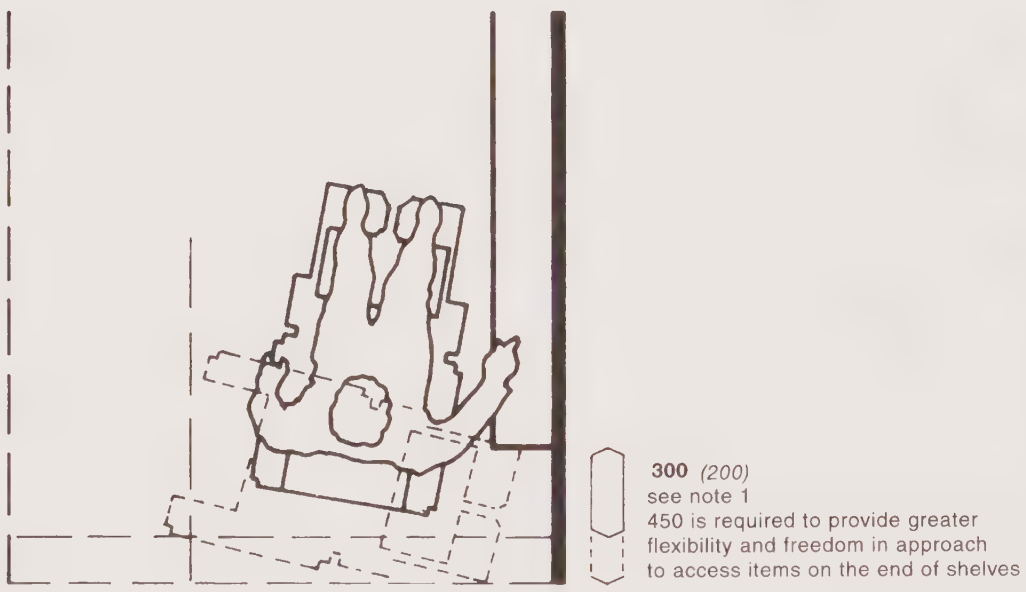
NHSEstates Ergonomic Data Bank
Component-user data sheet, not to scale

Shelving 3

Open 200 deep

Users:
Wheelchair users




300 (200)
see note 1
450 is required to provide greater
flexibility and freedom in approach
to access items on the end of shelves
1400
space for general wheelchair manoeuvring
and turning (see note 2)

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Corner shelving is not easily accessible to wheelchair users, particularly if lateral approach only can be used.

2. This dimension assumes that feet and footrests of wheelchair will pass under the lowest shelf to allow turning. Where this is not possible clear dimension must be increased to at least 1500.

3. Maximum height refers to shelves where items stored are lightweight and of a size that can be easily handled.

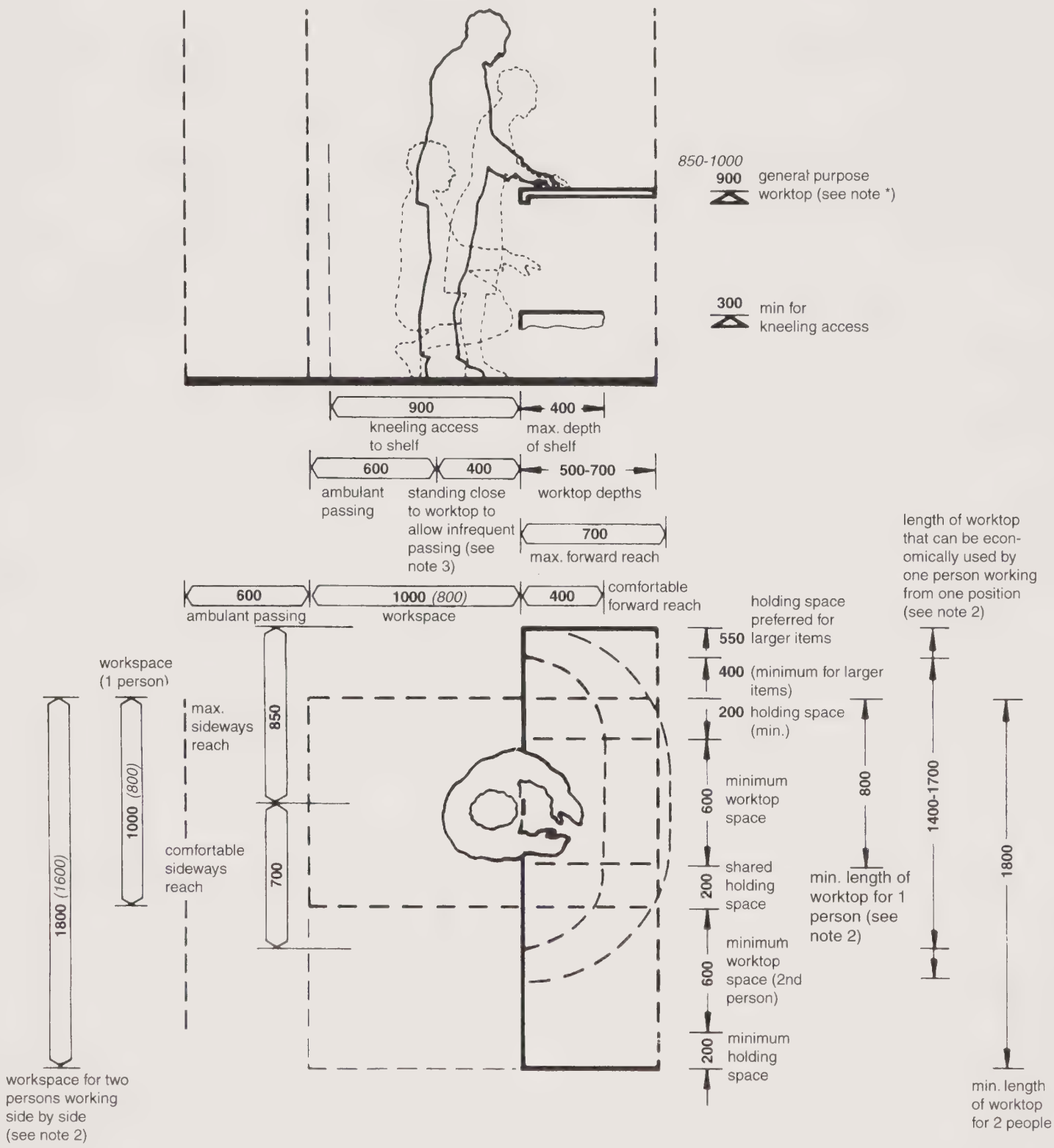
Activities:
General manual tasks.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Worktop bench 1

With or without shelf under

Users:
Fully ambulant


850-1000
900 general purpose worktop (see note *)
300 min for kneeling access
900 kneeling access to shelf
400 max. depth of shelf
600 ambulant passing
400 standing close to worktop to allow infrequent passing (see note 3)
500-700 worktop depths
700 max. forward reach
600 ambulant passing
1000 (800) workspace
400 comfortable forward reach
workspace (1 person)
1800 (1600)
1000 (800)
max. sideways reach
850
700
comfortable sideways reach
workspace for two persons working side by side (see note 2)
550 holding space preferred for larger items
400 (minimum for larger items)
200 holding space (min.)
600 minimum worktop space
200 shared holding space
600 minimum worktop space (2nd person)
200 minimum holding space
800 min. length of worktop for 1 person (see note 2)
length of worktop that can be economically used by one person working from one position (see note 2)
1400-1700
1800
min. length of worktop for 2 people

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Worktop heights - should be suited to both the stature (elbow height) of the user and the nature of the work undertaken. Heavy work generally requires lower worktop than light or delicate work where elbow support may be beneficial. The range shown is suitable for both male and female users, viz. 850 heavy manual work; 900 light manual work; 950 - 1000 delicate work. Individual special tasks may require specific recommendations - see Data Sheet Worktop/Bench - working heights.

2. Worktop space requirements must be related to actual tasks undertaken and size of items for which associated holding space is required. Most light manual tasks will require a length of worktop of 600 plus an additional holding space. The minimum holding space recommendation of 200 may be inadequate for some tasks.

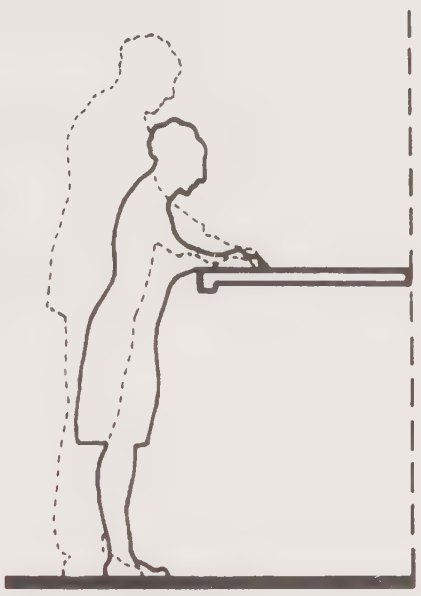
3. Requires that work must stop when a person is passing.

Activities:
Standing working heights.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Worktop bench 2

Users:
Fully ambulant



DELICATE WORK note 2b		LIGHT MANUAL WORK note 2c		HEAVY MANUAL WORK note 2a		GENERAL PURPOSE WORKTOPS
Men	Women	Men	Women	Men	Women	
1100 / 1000	1050 / 950	950 / 900	900 / 850	900 / 750	850 / 700	preferred height for standard fixed worktop 900 1000 / 850 acceptable range for both male and female use 1000-950 delicate work 900 light work 850 heavy work

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

© Crown Copyright

1. Working heights for standing activities must be suited to:
a) the elbow height of the operative.
b) the nature of the manual task undertaken. Additional consideration may require to be given to:
c) some critical requirements of the work.
d) the characteristics of the tools used.
e) the working habits of the operatives.

2. The following are general principles:
a) if the work calls for the application of considerable force, involving muscles of the back and shoulders, then the worktop should be well below elbow height, i.e. 150mm or greater.
b) if the work undertaken is delicate and benefit can be derived through relieving muscular stress on the back and arms by resting the elbows on the worktop, then the worktop should be at or slightly above standing elbow height.
c) for general manipulative tasks which do not require much strength, the worktop should be 100 - 150mm below standing elbow height. This recommendation may however be affected by the nature and amount of handling work involved and in particular the size of the objects (boxes, containers, etc.) handled. For example working with containers or receptacles necessitates a lower working height.

3. In composite work situations, difficulties can arise from the need to provide a variety of optimum work surface heights to suit the characteristic requirements of individual tasks, e.g. in kitchens, sink rim heights should be 100 - 150mm higher than the cooker hob, with most standing preparation worktops somewhere between these extremes. It may be inherently dangerous to introduce variations in worktop heights at adjacent stations, e.g. where hot pots or pans can be hit against raised edges when being handled. Where such a danger exists, it is recommended that a uniform height should be used for adjacent surfaces.

4. Whilst a standard height of 900mm is recommended for general use, this should not be used indiscriminately for all work surfaces. For example, preferred working heights for various kitchen activities are as follows:

sink rim height - 950 (900 min.); height of cooker/hob - 800-850 (900 max.); rolling and kneading - 850/875; cutting and chopping - 900; whipping cream - 800; ironing - 850 (range 750-950).

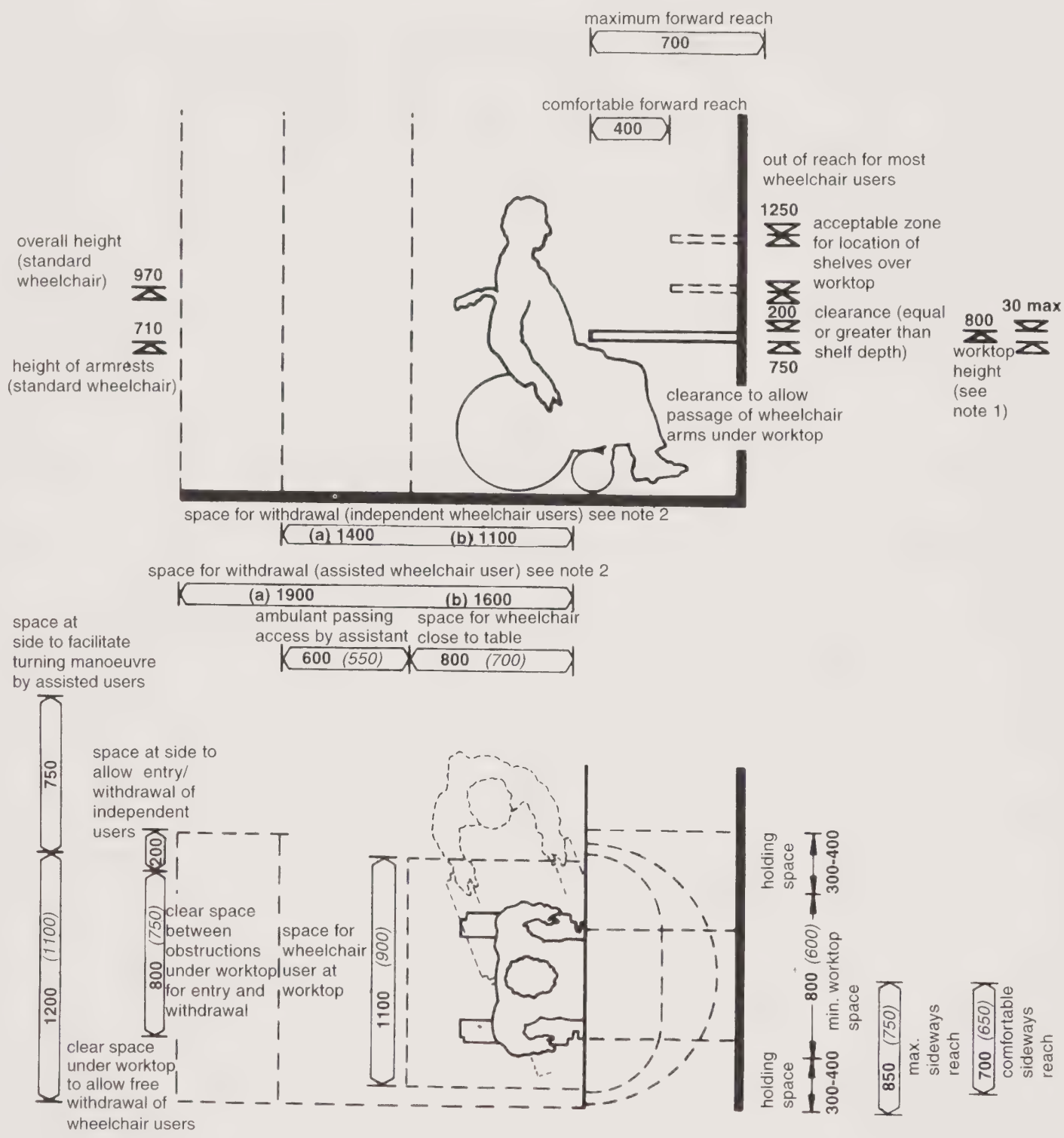
Activities:
General manual tasks. Placing or retrieving items on shelf over worktop.

NHSEstates Ergonomic Data Bank
Component-user data sheet, not to scale

Worktop bench 3

(with or without shelf over)

Users:
Independent and assisted wheelchair users



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Fitting heights to tasks is difficult in the case of wheelchair users as compromises are necessary to combat different wheelchair characteristics e.g. 800 worktop height is approx. 50mm higher than user elbow height and therefore not satisfactory for small female users. A table height of 750 is preferable for smaller users but may not offer adequate clearance under the worktop. This can be dangerous in that hands or thighs may be pinched when approaching the worktop, which is critical where users suffer from sensory loss. Some consideration should however be given to a 750 high worktop as this can also be used by most seated users so long as they are provided with an adjustable chair and footrest. This avoids the segregation of facilities for ambulant and wheelchair users.

2.
(a) Refers to space required for the more difficult manoeuvre of going in and out of an under worktop space 800 wide.

(b) Refers to conditions where full turning of the chair under the table is possible in at least one direction during entry or withdrawal.

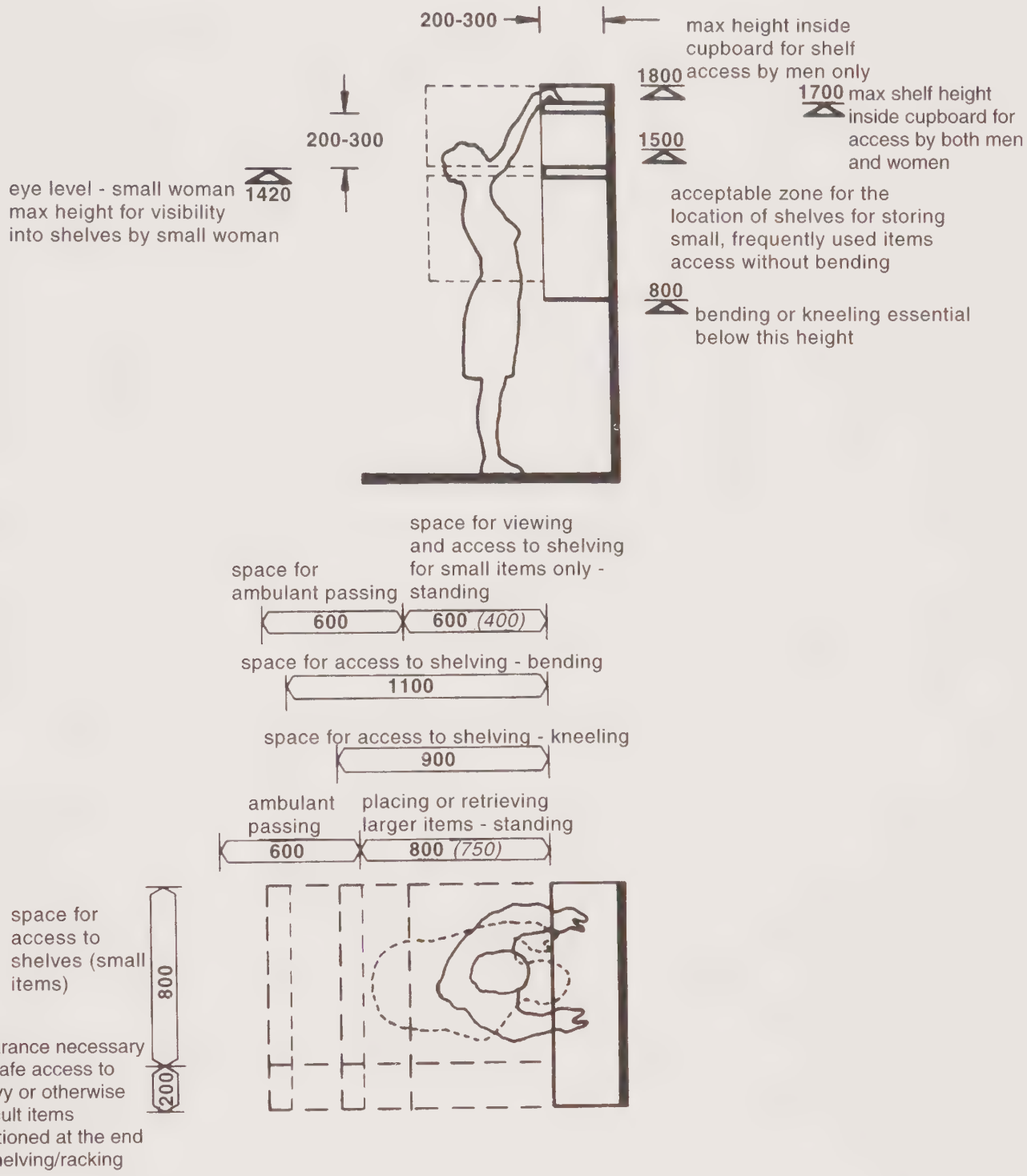
Activities:
Storage. Placing or removing small items.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Cupboard 1

Small, wall mounted sliding or side hung door with no obstruction under

Users:
Fully ambulant adults


200-300
max height inside cupboard for shelf access by men only
1800
1700 max shelf height inside cupboard for access by both men and women
200-300
1500
eye level - small woman 1420
max height for visibility into shelves by small woman
acceptable zone for the location of shelves for storing small, frequently used items access without bending
800
bending or kneeling essential below this height
space for viewing and access to shelving for small items only - standing
space for ambulant passing
600
600 (400)
space for access to shelving - bending
1100
space for access to shelving - kneeling
900
ambulant passing
placing or retrieving larger items - standing
600
800 (750)
space for access to shelves (small items)
800
Clearance necessary for safe access to heavy or otherwise difficult items positioned at the end of shelving/racking
200

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Shelves should preferably be adjustable in height. The degree of adjustability should be the maximum which is practical and possible (suggested range 25 - 50mm depending upon use).

2. Shelf heights and dimensions should be related to the size and weight of the items stored, also the frequency with which they need to be accessed. Frequently used objects should be stored as near worktop height as possible and preferably not above eye level and not below 800mm above floor level.

3. Maximum heights refer to lightweight and easily handled items infrequently accessed.

4. The intershelf interval should preferably be 200 - 300mm and not less than shelf depth. The minimum for reasonable access is 150 - 250 where the shelf depth is smaller than actual cupboard depth.

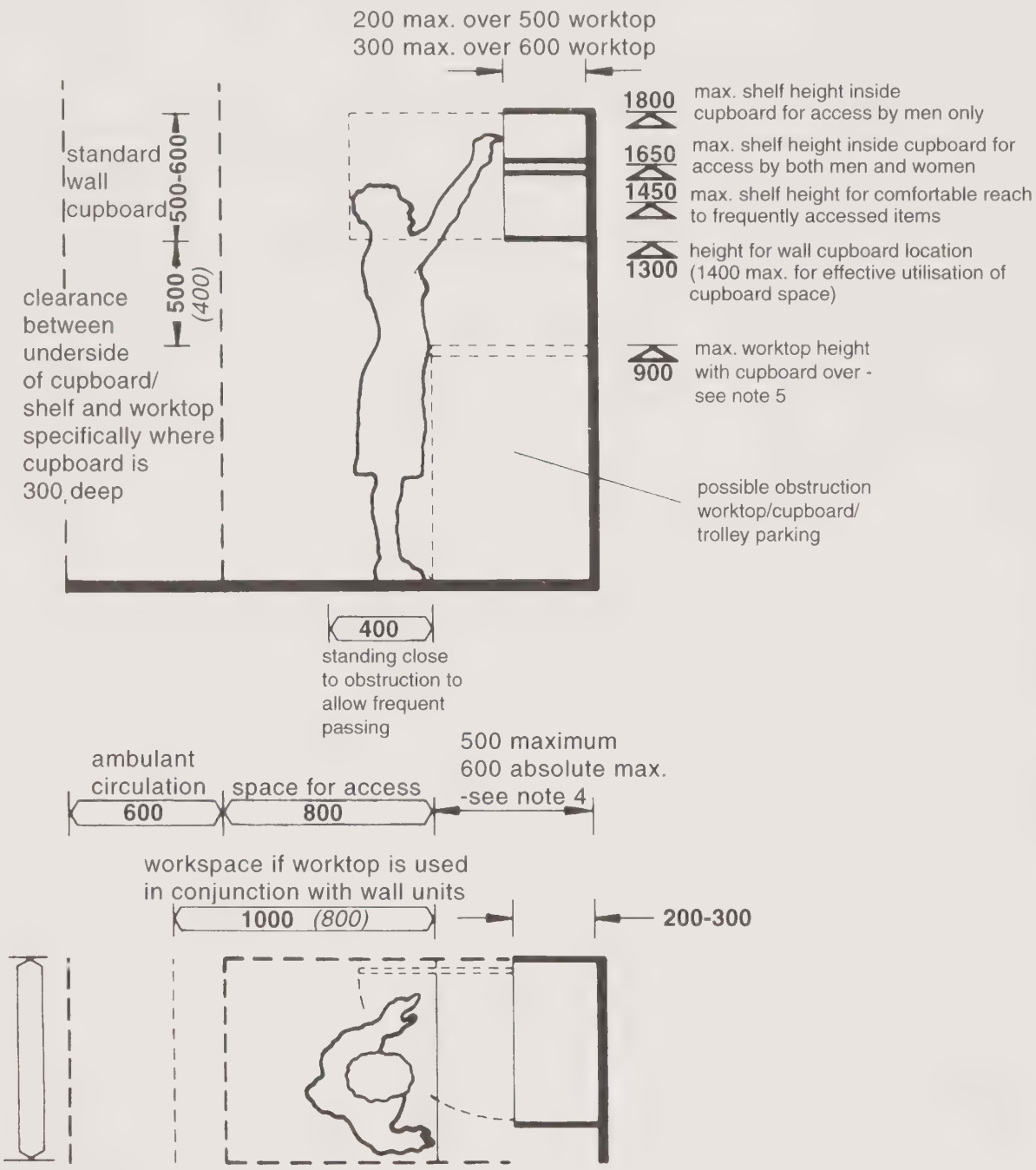
Activities:
Storage. Placing or removing small items.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Cupboard 2

Small, wall mounted sliding or side hung door with obstruction under

Users:
Fully ambulant


200 max. over 500 worktop
300 max. over 600 worktop
1800
max. shelf height inside cupboard for access by men only
1650
max. shelf height inside cupboard for access by both men and women
1450
max. shelf height for comfortable reach to frequently accessed items
1300
height for wall cupboard location (1400 max. for effective utilisation of cupboard space)
900
max. worktop height with cupboard over - see note 5
standard wall cupboard
500-600
500
(400)
clearance between underside of cupboard/ shelf and worktop specifically where cupboard is 300 deep
possible obstruction worktop/cupboard/ trolley parking
400
standing close to obstruction to allow frequent passing
500 maximum
600 absolute max.
-see note 4
ambulant circulation
600
space for access
800
workspace if worktop is used in conjunction with wall units
1000 (800)
200-300
800 space to remove or place small items in cupboards (using 2 hands)
(600) permits use of one hand only in most cases

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Shelves should preferably be adjustable in height. The degree of adjustability should be the maximum which is practical and possible (suggested range 25 - 50mm depending upon use).

2. Shelf heights and dimensions should be related to the size and weight of the items stored, also the frequency with which they need to be accessed. Frequently used objects should be stored as near worktop height as possible and preferably not above eye level and not below 800mm above floor level.

3. Maximum heights refer to lightweight and easily handled items infrequently accessed.

4. Where worktops or other obstruction exceed 500 recommendations refer to grasping height to front edge of 300 deep shelf or cupboard only. Cleaning and reaching into shelves for small items is difficult.

5. Higher worktops require that cupboards be fixed higher to retain a viable workspace under, thus reducing the effective utilisation of the cupboard.

6. The intershelf interval should preferably be 200 - 300mm and not less than shelf depth. The minimum for reasonable access is 150 - 250 where the shelf depth is smaller than actual cupboard depth.

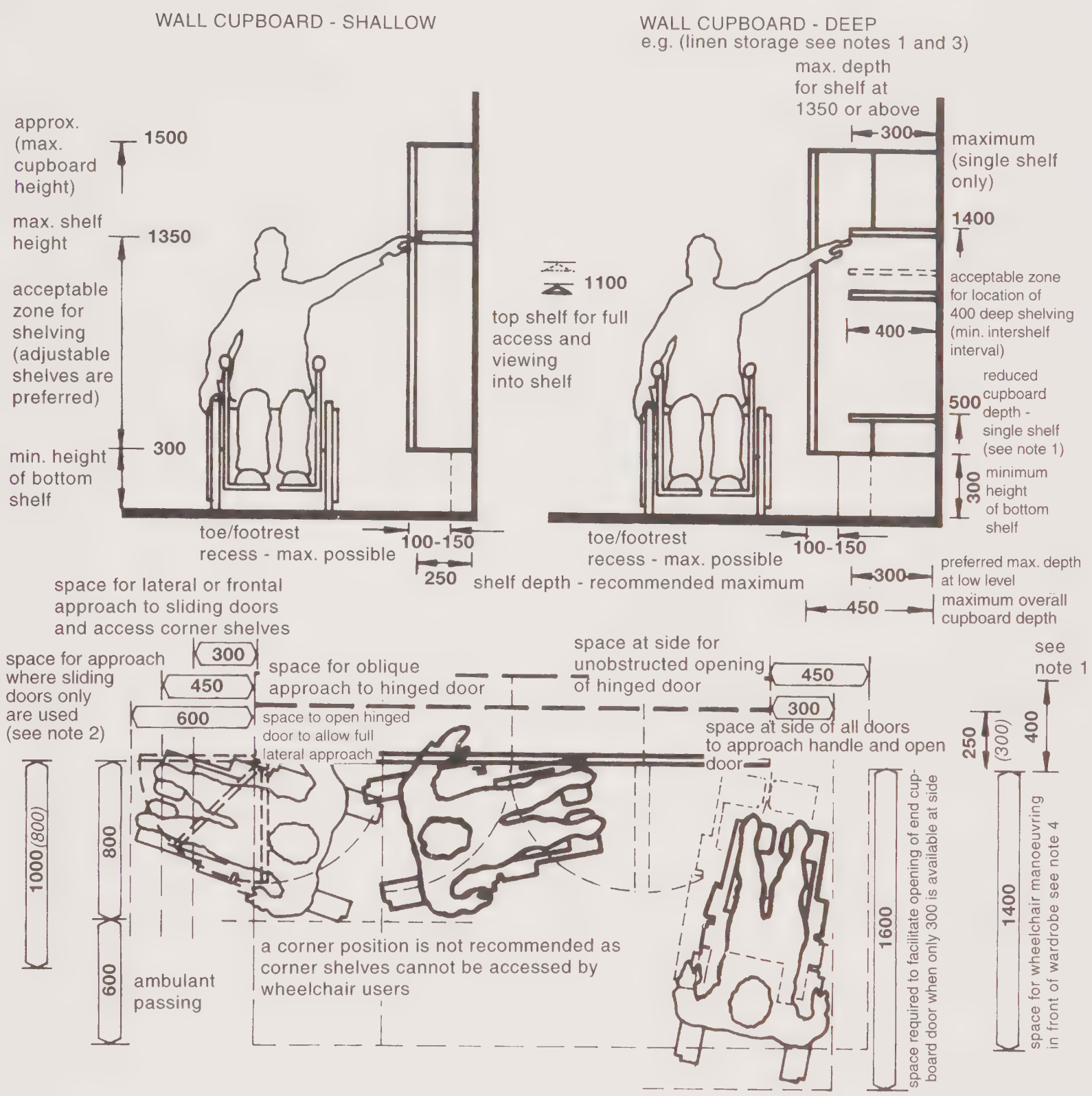
Activities:
Access to cupboards - including opening / closing doors and placing / retrieving items.

NHSEstates Ergonomic Data Bank
Component-user data sheet, not to scale

Cupboards 3

wall mounted shallow / deep

Users:
Wheelchair users


WALL CUPBOARD - SHALLOW
approx. (max. cupboard height)
1500
max. shelf height
1350
acceptable zone for shelving (adjustable shelves are preferred)
min. height of bottom shelf
300
toe/footrest recess - max. possible
100-150
250
shelf depth - recommended maximum
space for lateral or frontal approach to sliding doors and access corner shelves
space for approach where sliding doors only are used (see note 2)
300
450
600
space for oblique approach to hinged door
space to open hinged door to allow full lateral approach
1000 (800)
800
600
ambulant passing
a corner position is not recommended as corner shelves cannot be accessed by wheelchair users
WALL CUPBOARD - DEEP
e.g. (linen storage see notes 1 and 3)
max. depth for shelf at 1350 or above
300
maximum (single shelf only)
1400
acceptable zone for location of 400 deep shelving (min. intershelf interval)
400
1100
top shelf for full access and viewing into shelf
reduced cupboard depth - single shelf (see note 1)
500
minimum height of bottom shelf
300
toe/footrest recess - max. possible
100-150
preferred max. depth at low level
300
maximum overall cupboard depth
450
space at side for unobstructed opening of hinged door
450
300
space at side of all doors to approach handle and open door
1600
space required to facilitate opening of end cupboard door when only 300 is available at side
see note 1
250
(300)
400
1400
space for wheelchair manoeuvring in front of wardrobe see note 4

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Shallow cupboards and shelves are preferred. Reaching to the back of deep shelves at high and low levels is extremely difficult and potentially dangerous for wheelchair users. Deep cupboards should therefore only be provided for specific items where deeper shelves are essential e.g. for linen storage.

2. Where space in front of sliding doors is only 1000 *(800)* full manoeuvring space must be conveniently available nearby.

3. Slatted shelves should run at right angles to the cupboard door to ease movement of stored linen.

4. This dimension assumes that feet and footrests of wheelchair will pass under the lowest shelf to allow turning. Where this is not possible clear dimension must be increased to at least 1500.

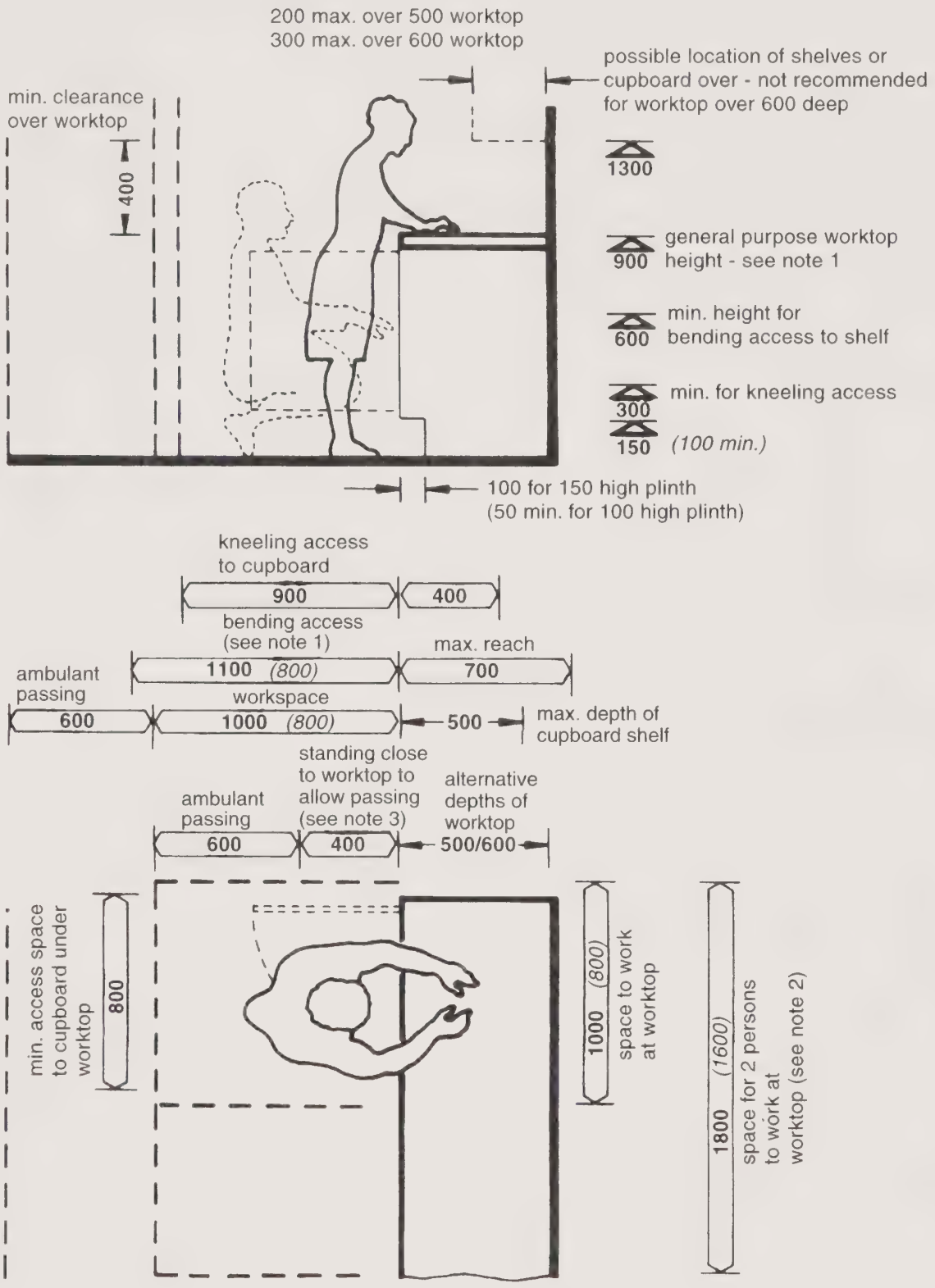
Activities:
Storage. Placing or removing items.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Cupboard 4

Low level - side hung/sliding doors

Users:
Fully ambulant



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Worktop heights - should be suited to both the stature (elbow height) of the user and the nature of the work undertaken. Heavy work generally requires a lower worktop than light or delicate work where elbow support may be beneficial. The range shown is suitable for both male and female users; 850 heavy manual work; 900 light manual work; 950 - 1000 delicate work. Individual special tasks may require specific recommendations - see Data Sheet Worktop/Bench.

2. Worktop length requirements must be related to actual tasks undertaken and size of items for which associated holding space is required. Most light manual tasks will require a length of worktop of 600 plus an additional holding space. The minimum holding recommendation of 200 may be inadequate for some tasks.

3. Requires that work must stop when a person is passing.

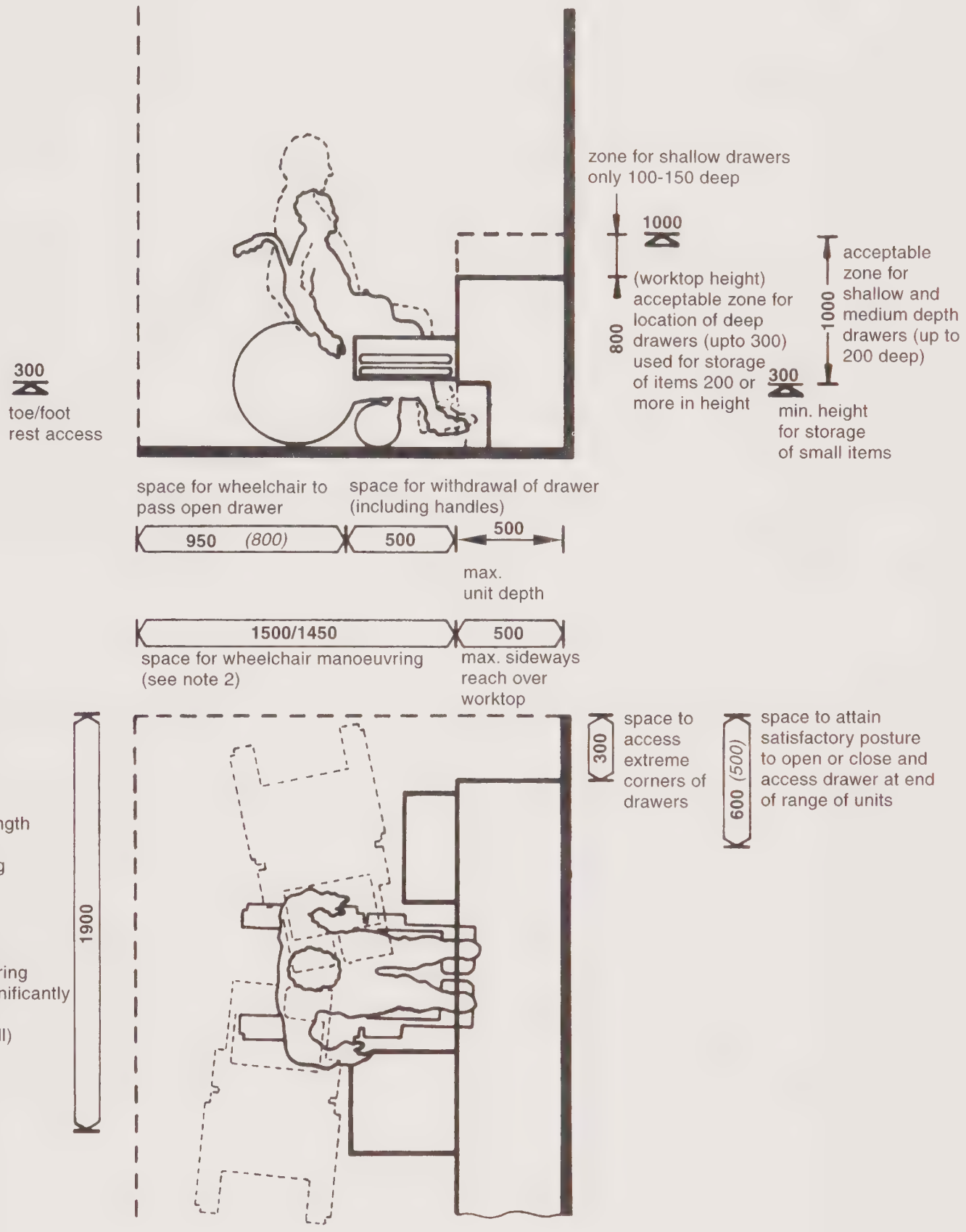
4. The space required for bending access should be provided only where frequent access is required to a second shelf, i.e. at 600 minimum above floor level.

Activities:
Access to drawers at low level.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Drawers 1

Users:
Independent wheelchair users


zone for shallow drawers only 100-150 deep
1000
(worktop height) acceptable zone for location of deep drawers (upto 300) used for storage of items 200 or more in height
800
1000
acceptable zone for shallow and medium depth drawers (up to 200 deep)
300
min. height for storage of small items
300
toe/foot rest access
space for wheelchair to pass open drawer
space for withdrawal of drawer (including handles)
950 (800)
500
500
max. unit depth
1500/1450
space for wheelchair manoeuvring (see note 2)
500
max. sideways reach over worktop
pref. min. length of all manoeuvring space
1600
where width of manoeuvring space is significantly greater than (1500 overall)
1900
300
space to access extreme corners of drawers
600 (500)
space to attain satisfactory posture to open or close and access drawer at end of range of units

Notes:

1350 *(1300)*
Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Pull out drawers are recommended for deep low level storage for chair bound users. Deep low level cupboards are extremely difficult or impossible to use without special adaptors or aids.

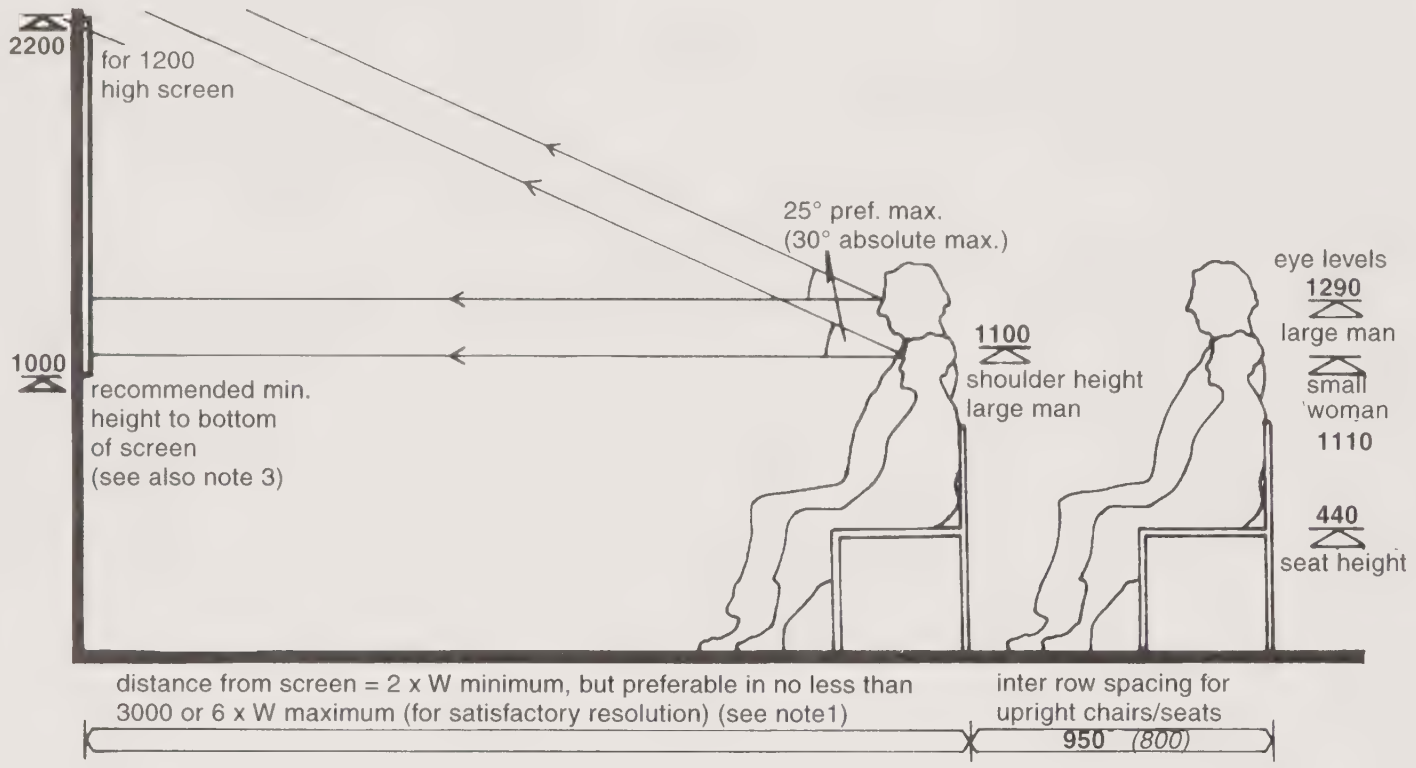
2. 1450 will allow turning where feet and footrest can pass under the overhang of toe/ footrest recess. Where this is not possible however the clear dimension must be increased to 1500 to allow 360 / 180° turns to be accommodated. This is essential in most dressing and frequently used areas.

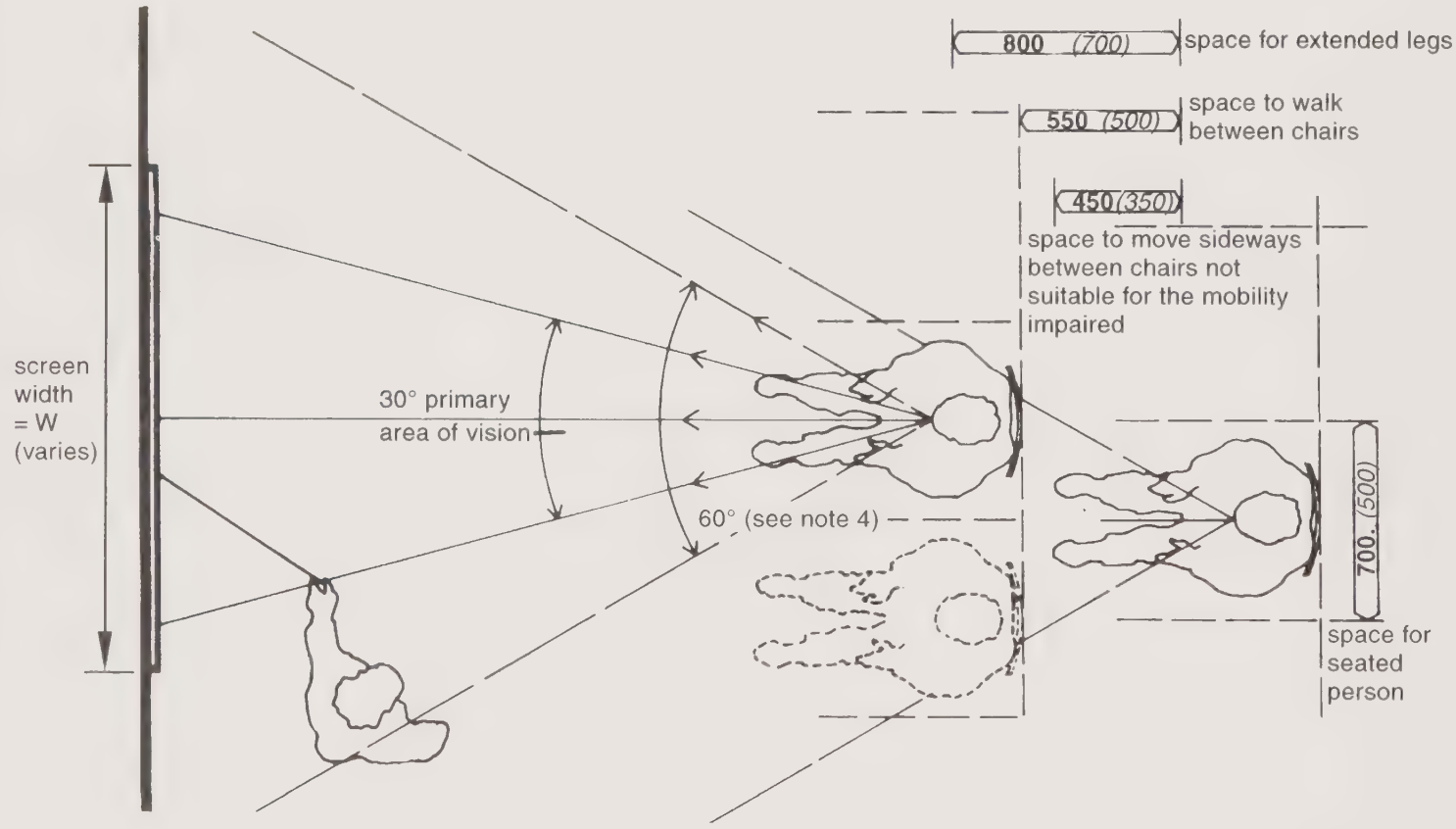
Activities:
Viewing e.g. seminar screen.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Screen / Board 1

Users:
Seated users





Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Viewing of large (600mm/24") TV screen - min. 250. max. 6500, distances will be reduced for smaller screens.

2. Seats should be staggered if each person is to have as good a view of the screen as possible.

3. In large lecture rooms, height to bottom of screen should be higher (up to 1600).

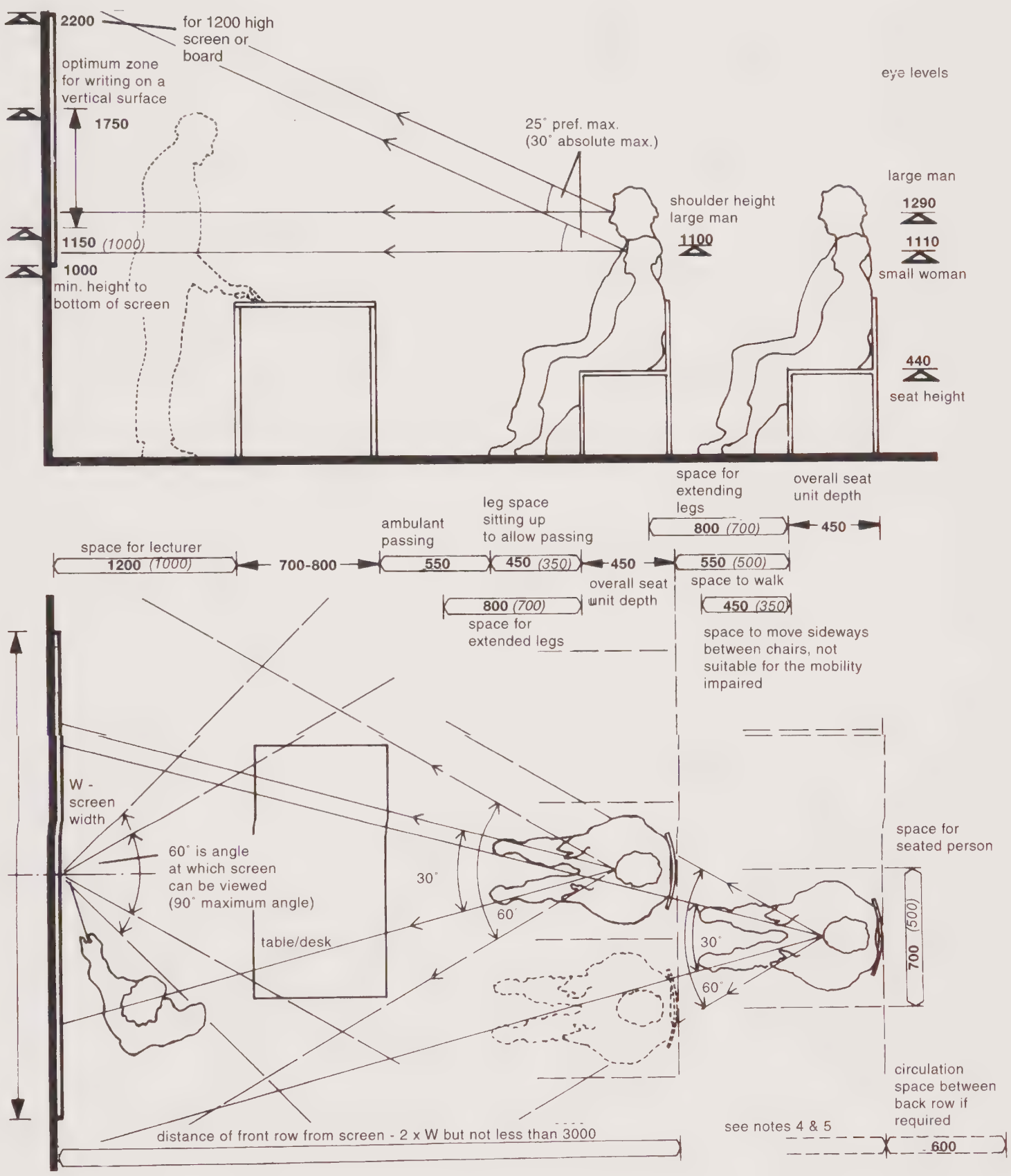
4. 60° - limit of peripheral viewing (limit of colour discrimination) - max. screen width for satisfactory viewing.

Activities:
Viewing and instructing using a screen and board e.g. seminar screen.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Screen / Board 2

Users:
Seated users



Notes:

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Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Seats should be staggered if each person is to have as good a view of the screen as possible.

2. In large lecture rooms, height to bottom of screen should be higher (up to 1600).

3. A pointer will be required to draw attention to details which appear on the screen / board above 1750.

4. Preferable number of seats per row:

Front row = 5 (6)

Front row max. = 9 (10)

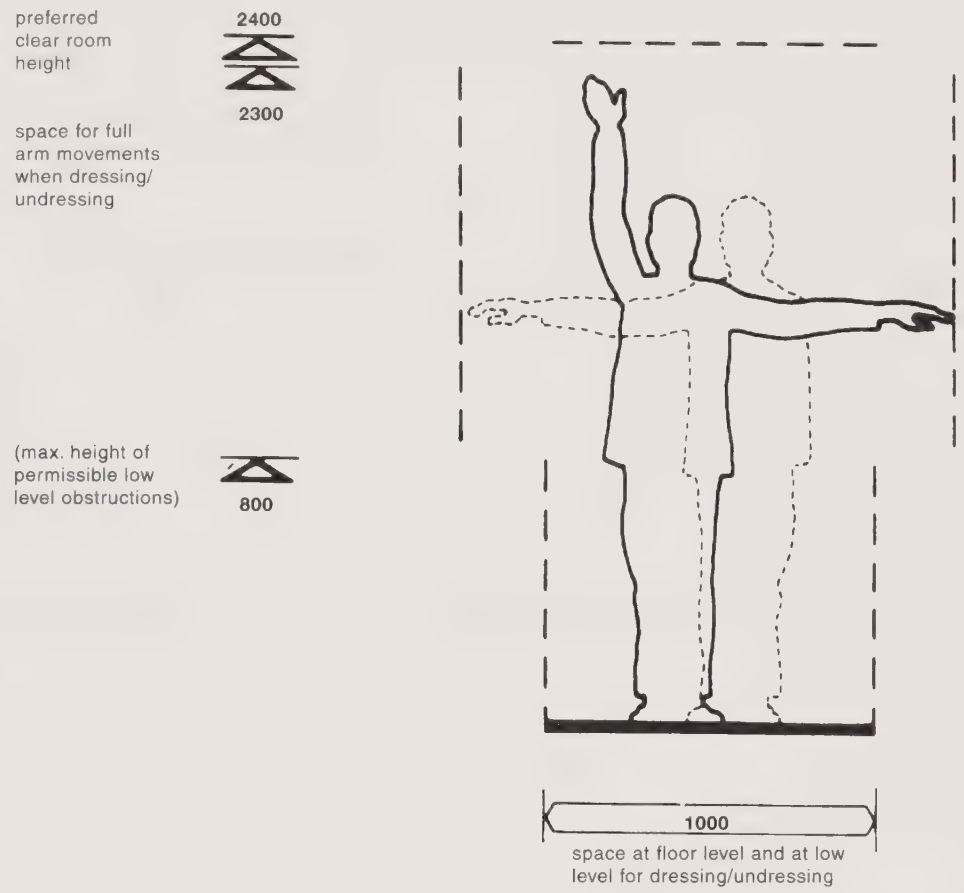
5. Recommended max. distance from back row to screen = 6 x W.

Activities:
Dressing / undressing.

NHSEstates Ergonomic Data Bank
Component-user data sheet, not to scale

Person 8

Users:
Fully ambulant adults without assistance


preferred clear room height
2400
2300
space for full arm movements when dressing/ undressing
(max. height of permissible low level obstructions)
800
1000
space at floor level and at low level for dressing/undressing
1500
space for arm movement when dressing/undressing
space for arm movements when dressing/undressing
1200
space at floor level and at low level for dressing/undressing
1000

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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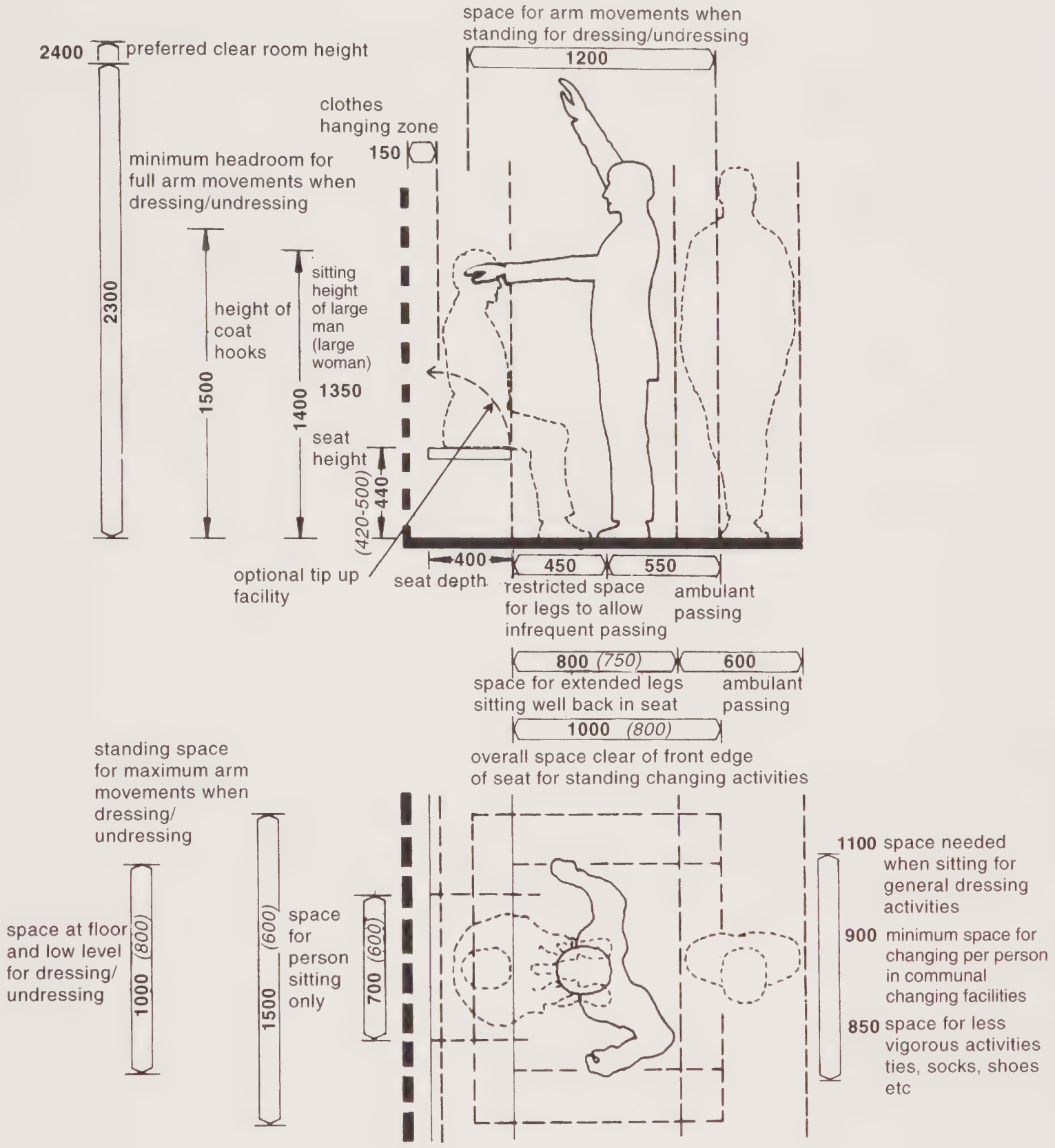
Activities:
Dressing and undressing, e.g. from outdoor clothes and uniform or for examination.
Temporary storage of clothes during changing (before transferring to a locker).
Sitting accommodation to allow easier changing and waiting for others.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Changing 2

Seat and clothes hooks

Users:
Staff and fully ambulant patients


space for arm movements when standing for dressing/undressing
1200
2400
preferred clear room height
clothes hanging zone
150
minimum headroom for full arm movements when dressing/undressing
2300
height of coat hooks
1500
sitting height of large man (large woman)
1400
1350
seat height
(420-500)
440
optional tip up facility
400
seat depth
450
550
restricted space for legs to allow infrequent passing
ambulant passing
800 (750)
600
space for extended legs sitting well back in seat
ambulant passing
1000 (800)
overall space clear of front edge of seat for standing changing activities
standing space for maximum arm movements when dressing/ undressing
space at floor and low level for dressing/ undressing
1000 (800)
1500 (600)
space for person sitting only
700 (600)
1100 space needed when sitting for general dressing activities
900 minimum space for changing per person in communal changing facilities
850 space for less vigorous activities ties, socks, shoes etc

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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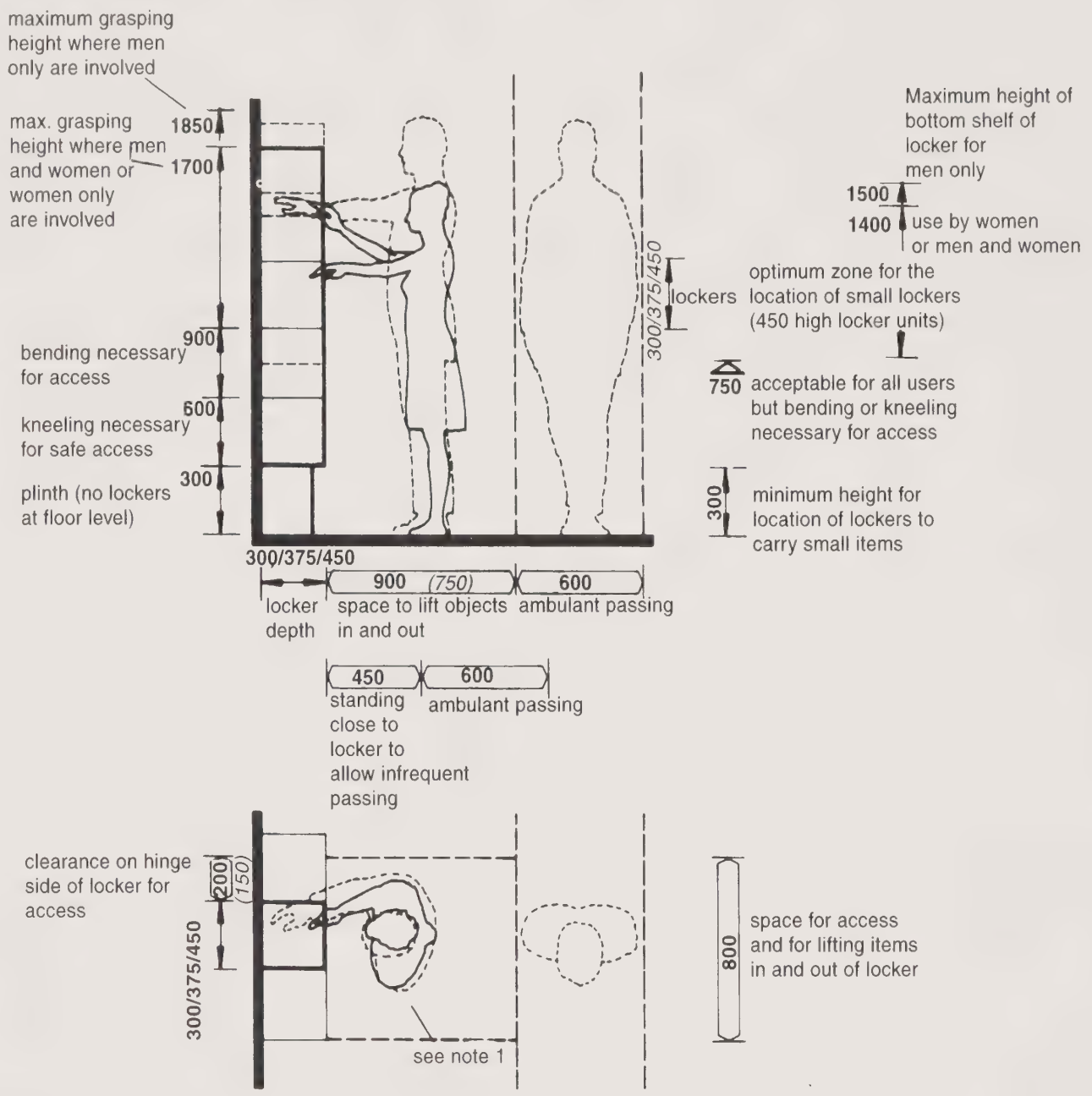
Activities:
Storage of small items of luggage and valuables.
Placing and retrieving items from locker.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Lockers 1

Small luggage

Users:
Staff


maximum grasping height where men only are involved
max. grasping height where men and women or women only are involved
1850
1700
900
bending necessary for access
600
kneeling necessary for safe access
300
plinth (no lockers at floor level)
300/375/450
lockers
300/375/450
Maximum height of bottom shelf of locker for men only
1500
1400
use by women or men and women
optimum zone for the location of small lockers (450 high locker units)
750
acceptable for all users but bending or kneeling necessary for access
300
minimum height for location of lockers to carry small items
300/375/450
locker depth
900 (750)
space to lift objects in and out
600
ambulant passing
450
standing close to locker to allow infrequent passing
600
ambulant passing
clearance on hinge side of locker for access
200 (150)
300/375/450
see note 1
800
space for access and for lifting items in and out of locker

Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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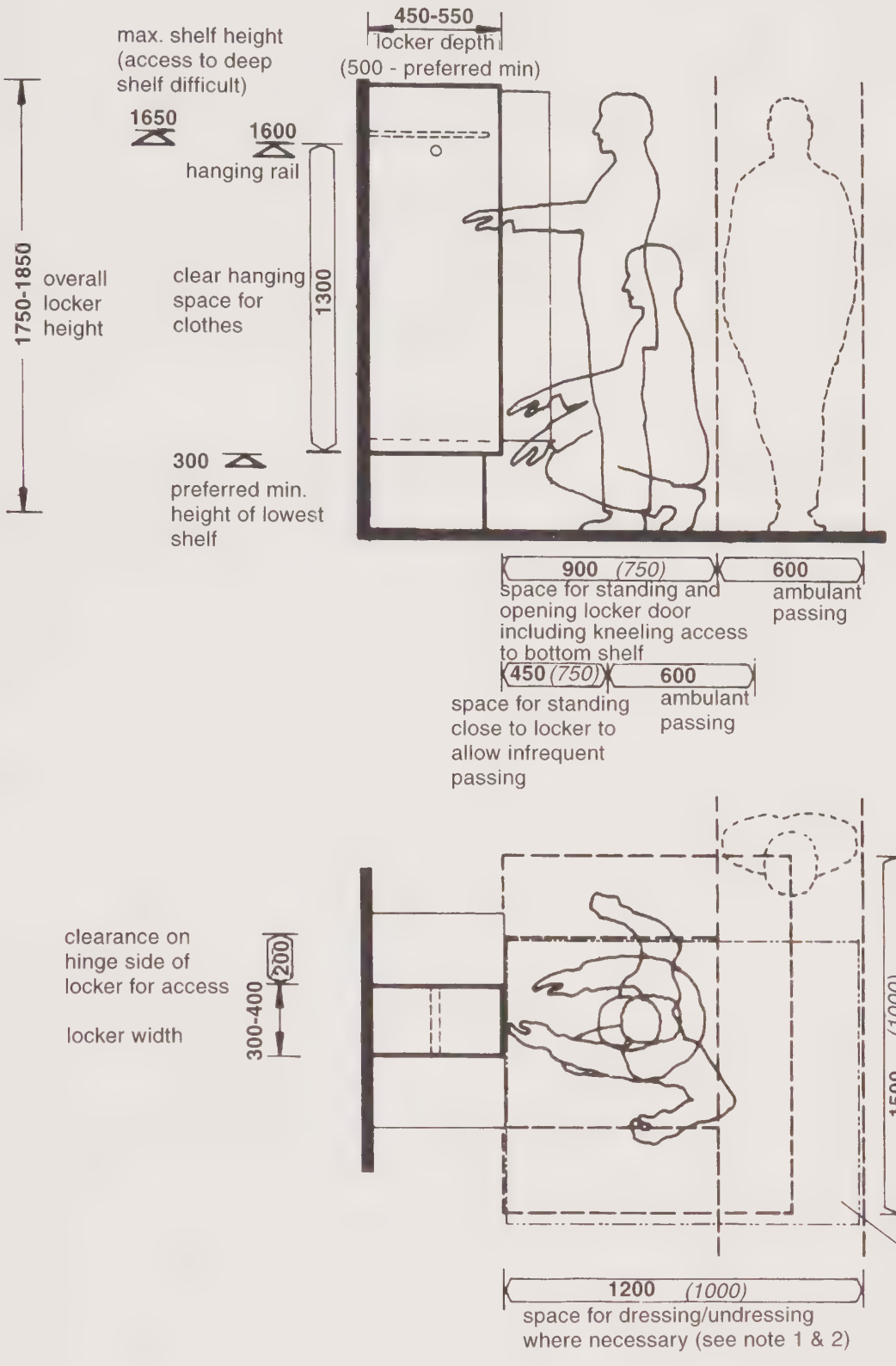
1. An associated changing space may be required (1500 x 1200) see Data Sheet Changing 2.

Activities:
Storage of clothes and valuables.
Placing and retrieving items from locker.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Lockers 2

Users:
Staff



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Provision of space for changing may be:

a) adjacent to lockers (recommended only for changing outer clothing).

b) as a separate provision, see Data Sheet Changing 2.

2. Peripheral requirements of changing space may be reduced below the level of arm movements (when standing) - approx. 800 above floor level.

3. Changing space will be shared with other locker users, and may be positioned as convenient for most users. The number of changing spaces required will depend upon the number of lockers and the frequency of concurrent use, and must therefore be decided at individual project level.

Switches and socket-outlets

(Notes to ergonomic data sheets)

General

1. Switches and socket-outlets must be accessible and easy to use. These include: light switches, electrical sockets and controls for heating, air conditioning and ventilation and equipment. Regulation of equipment should be operable by all, control systems should be at an accessible height, be in an accessible location and also be of a suitable design to be operated by all including those with reduced hand function and sight impairments. They should be operable with one hand only and not require pinch grips, tight grasping or twisting of the wrist.

Types of switch

2. Rocker switches are easier to operate by persons with finger or hand impairment providing wide rockers are selected. Toggle switches may be preferred to rocker switches for those situations where it is desirable to discern easily whether the switch is "on" or "off", but the toggles should be of a type which are long in length and light to operate. Switches controlling fixed appliances (other than lighting) should, in the event, incorporate an "on/off" light.

3. It is easier for people to discern between on and off when using toggle switches rather than rocker switches but the latter are easier to use by anyone with hand function difficulties. Therefore it is better to use a rocker switch with an indicator light in preference to a toggle switch for example on electric sockets and light controls.

4. Controls and switches must be large enough to provide a gripping surface sufficient to operate them. Tactile identification should be provided for visually impaired people. Large rocker switches and push pads can be operated by those with severe hand or wrist impairments as they can be operated with the whole hand or elbow but rotating switches should be avoided.

5. Switches should be up when off and down when on.

Spacing of switches

6. Switches for use by disabled people should be well spaced – preferably 85 mm minimum centre to centre, therefore multi-gang switches should be avoided. Where wiring regulations or functional requirements dictate the provision of ceiling-mounted switches pull cords should be provided with operating dollies, having preferred minimum width or diameter of 45 mm.

Socket-outlets

7. All socket-outlets for use by disabled persons should be switched. Adequate provision is important to avoid the need to use adapters, which can be dangerous. Double socket-outlets with the switches located between the sockets will be difficult for some disabled persons to operate correctly and therefore preferably should be avoided. Double socket-outlets with switches located at the outer edges are more suitable but the choice of manufacturers who can currently supply these is very restricted. An alternative for situations which functionally require adjacent socket-outlets for use by disabled persons is to provide single gang accessories mounted on dual boxes.

8. Hooks adjacent to sockets for plugs not currently in use are advantageous to reduce the need to bend down to reach them when required, which may be impossible for those with mobility impairments.

Accessibility

9. There should be a clear floor space large enough to enable a person with a mobility impairment, including people in wheelchairs to manoeuvre and access the switches and sockets. A space of 760 x 1220 mm is recommended in front of any switches or controls to allow either a forward or parallel approach by a person using a wheelchair.

10. Radiator controls should be placed at the top of the radiator, not the base, for easy access.

Height of switches/socket-outlets

11. Controls and switches should be located at a height which can be reached by short people, those in wheelchairs and children with the exception of those controls which operate items which would be hazardous to children. This requirement is also applicable to controls and switches located above obstructions. If the controls can be approached sideways the maximum height of the controls should be 1400 mm and the lowest 230 mm above the floor. Electrical systems should be placed no lower than 300 mm from the floor. Electrical sockets should be placed at a maximum of 1200 mm and a minimum of 300 mm from the floor and 500 mm from the corners of rooms. Light switches should be at the same height as a door handle, the recommended height is 1040 mm from the floor (minimum 800 mm and maximum 1200 mm).

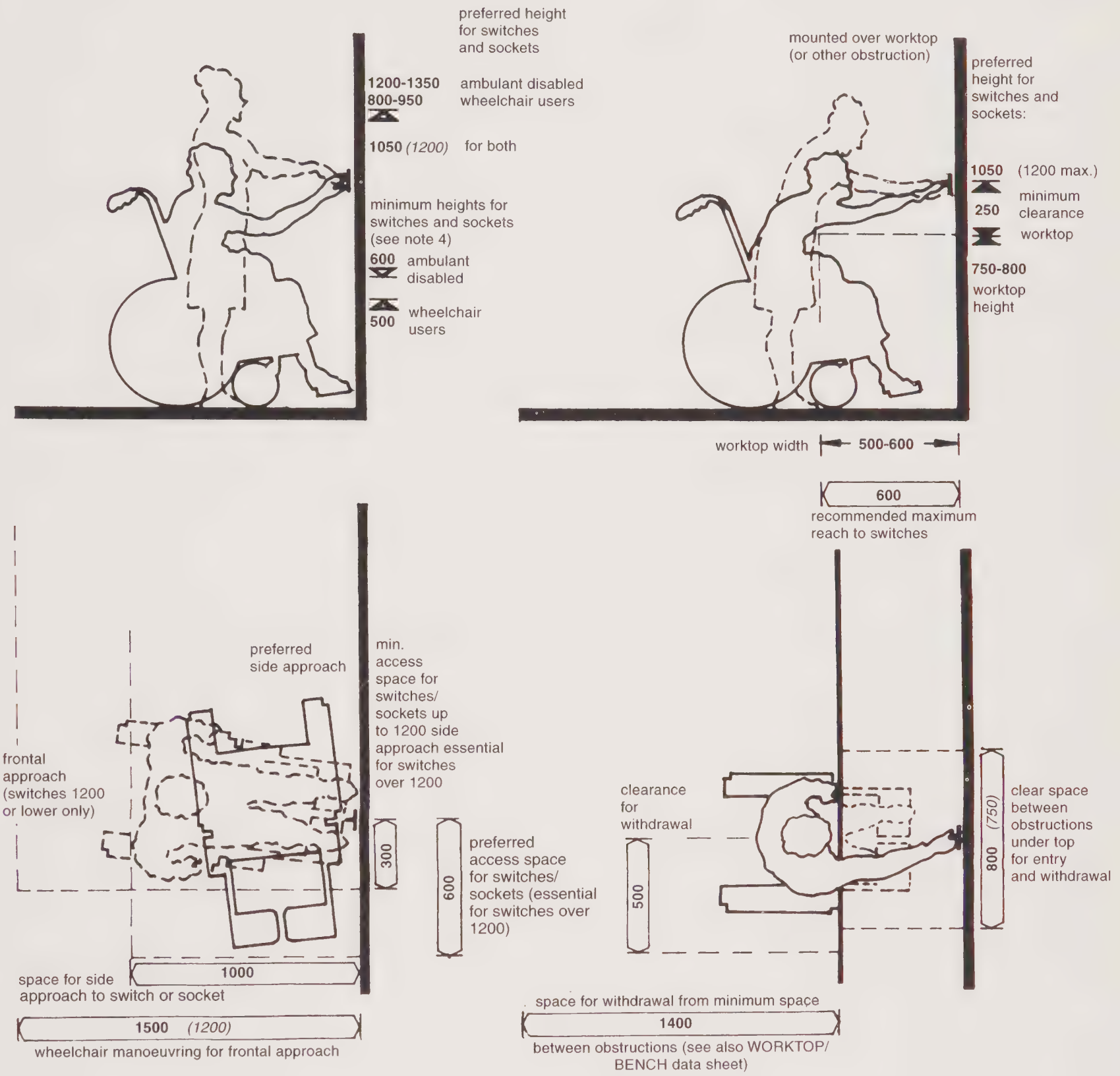
Activities:
Use of switches. Use of sockets, inserting and removing plugs

NHSEstates Ergonomic Data Bank
Component-user data sheet, not to scale

Switches & sockets 1

wall mounted

Users:
Fully ambulant, semi-ambulant and wheelchair users



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

a. See notes on opposite page

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12. Other switches and controls should be placed in the range of 800 mm – 1200 mm from the floor.

13. Controls, sockets and switches above obstructions which are 800 mm – 900 mm high and 500 mm – 600 mm wide should be a maximum of 1200 mm from the floor and be a minimum of 250 mm clear of the obstruction.

14. Minimum heights of low sockets should be applied where trailing flexes would be hazardous.

Plugs

15. Plugs could have handles incorporated into them to enable those with poor grip to insert and remove them more easily.

Lighting

16. Controls and switches should be located in a position where they can be well illuminated. A recommended illumination level is 100 lux at the surface of the controls/ switches.

17. Light switches, plugs, etc should be in a contrasting colour to their surroundings to enable those with visual impairments to be able to see them.

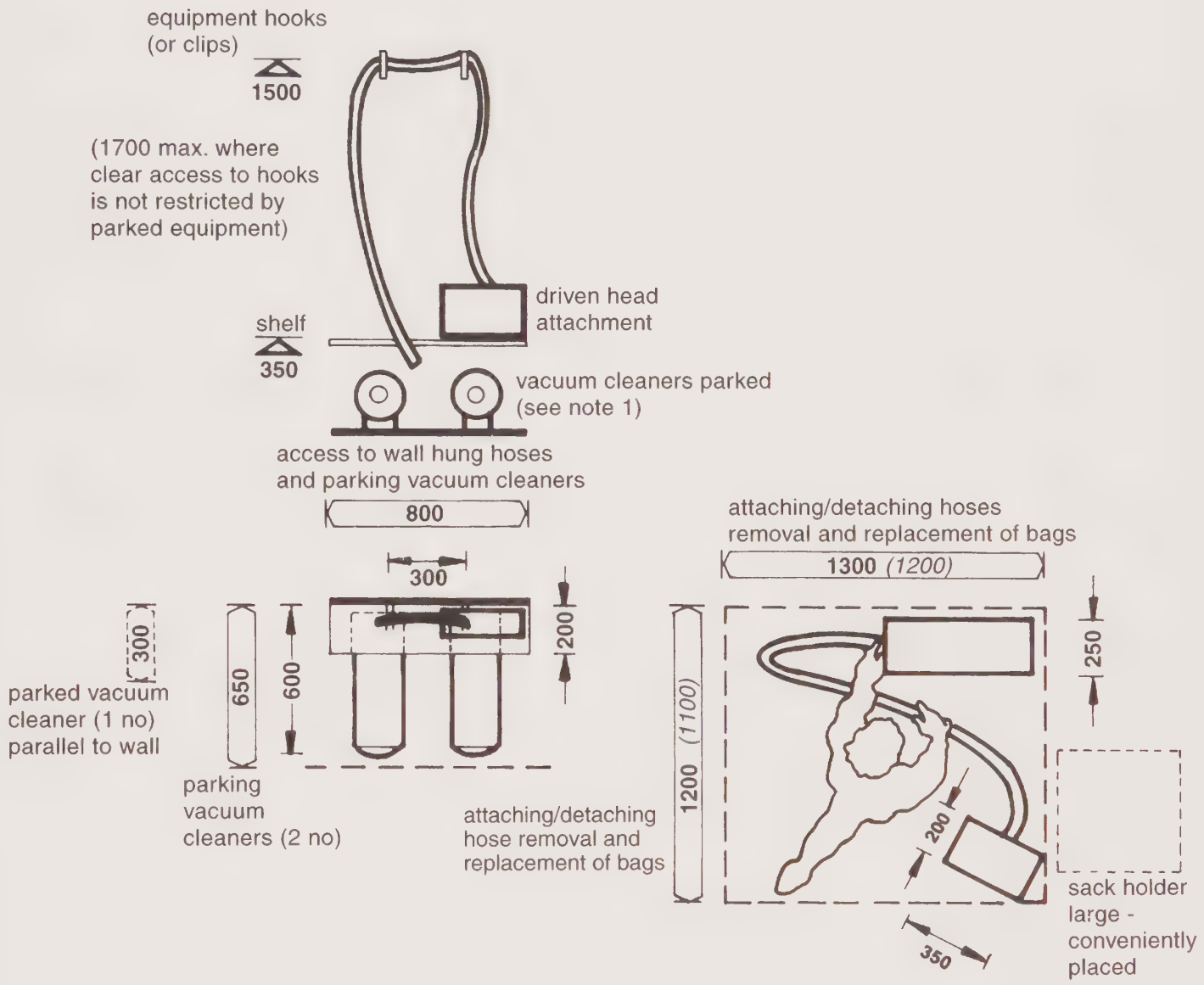
Activities:
Attaching/detaching hose.
Emptying and replacing cleaner bags.
Storage when not in use.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Suction Cleaner

Cylinder type with driven head attachment

Users:
Domestic Staff



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

1. The cylinder cleaner is best parked on as drawn, although it occupies less space parked in an upright position. It is unstable in this position and tipping it up on end involves a potentially hazardous bending.

2. The driven head is permanently attached to the hose and cable. This should preferably be stored on equipment hooks or clips. The head should be supported on a shelf or similar support clear of the floor so as not to impede room cleaning.

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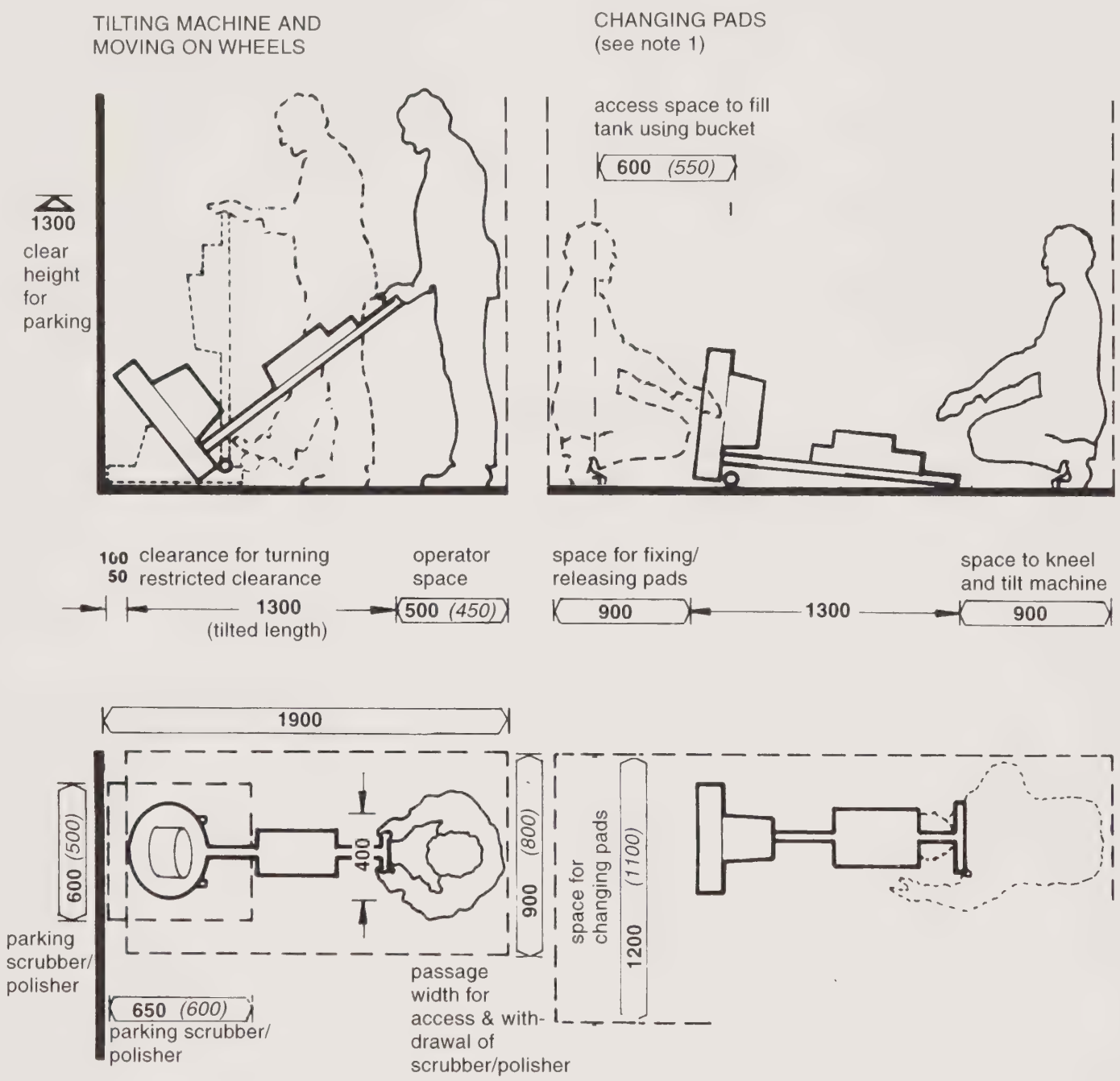
Activities:
Parking, Filling tank, tilting machine onto wheels and manoeuvring

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Scrubber/ Polisher

Users:
Domestic staff



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Shelves and/or racks should be provided for storage of brushes and pads, preferably positioned near the machine's normal parking position. 3 no. 500 x 500 shelves at 1300, 1500 and 1700 above floor level immediately over the parked machine is acceptable.

2. Scrubber/polisher parking - the machine is extremely heavy, and especially difficult to manoeuvre when not being operated (i.e. moved on its small wheels). It can be tilted within a space of 1600, but a more space consuming posture is required to move or turn the appliance. Direct and unobstructed access to a parking position is therefore preferred.

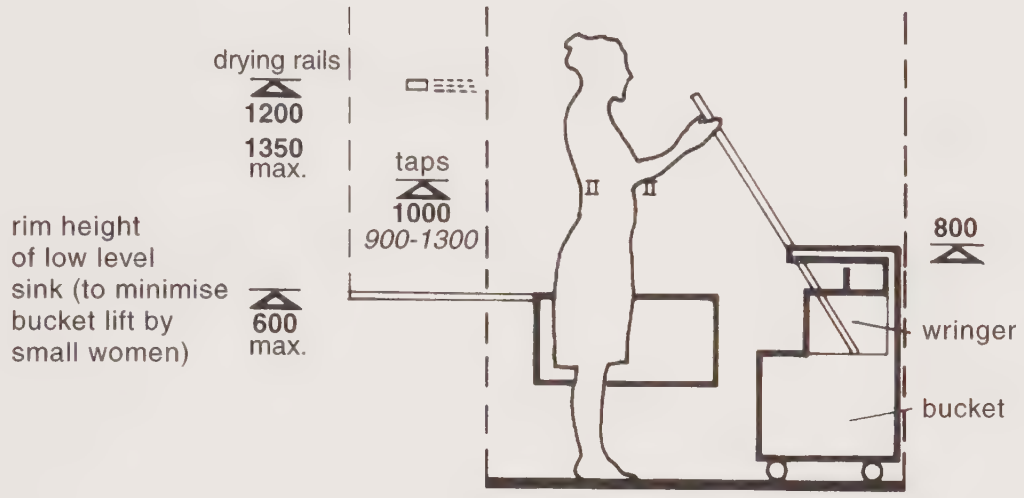
Activities:
Washing, wringing and drying mops. Filling and emptying buckets

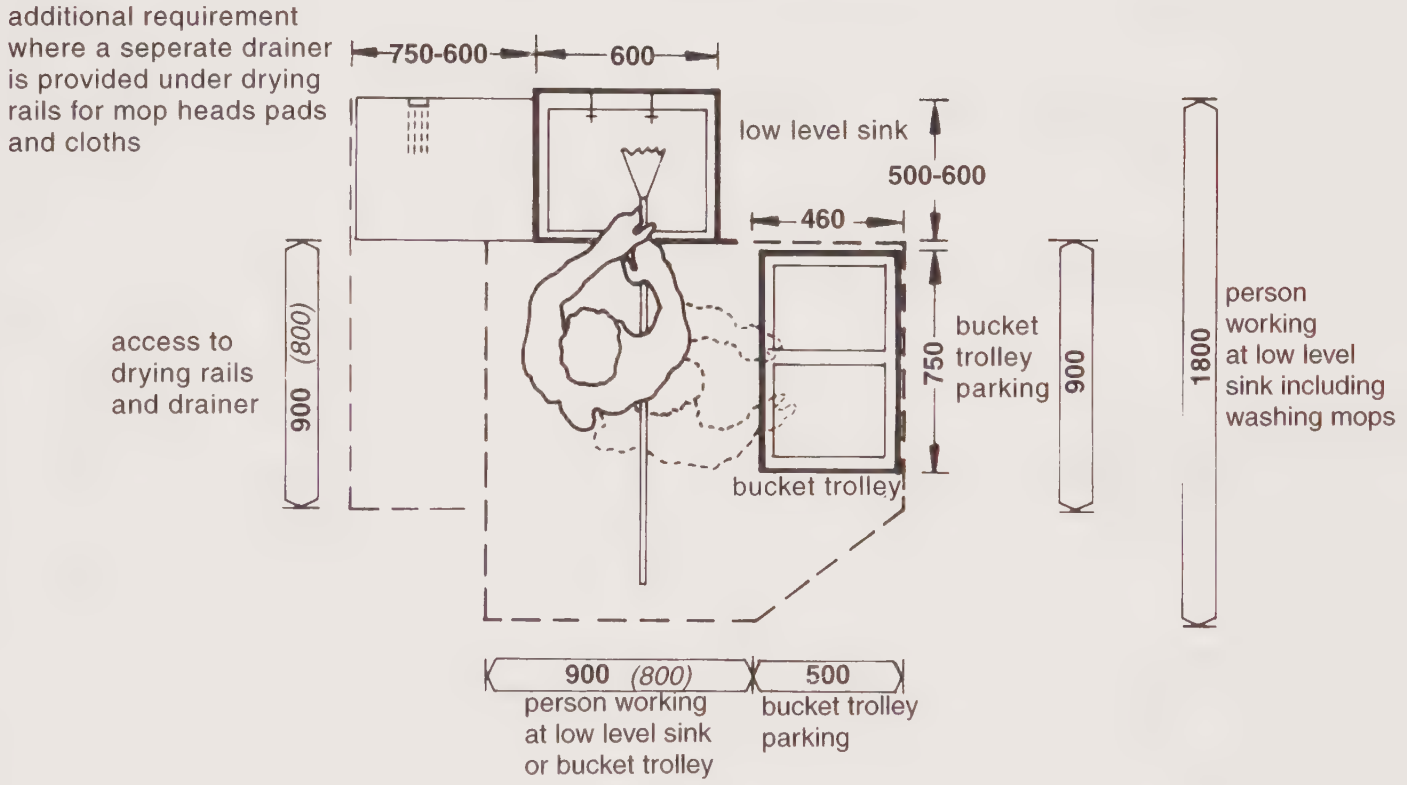
NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Bucket trolley

Double with wringer

Users:
Domestic staff





Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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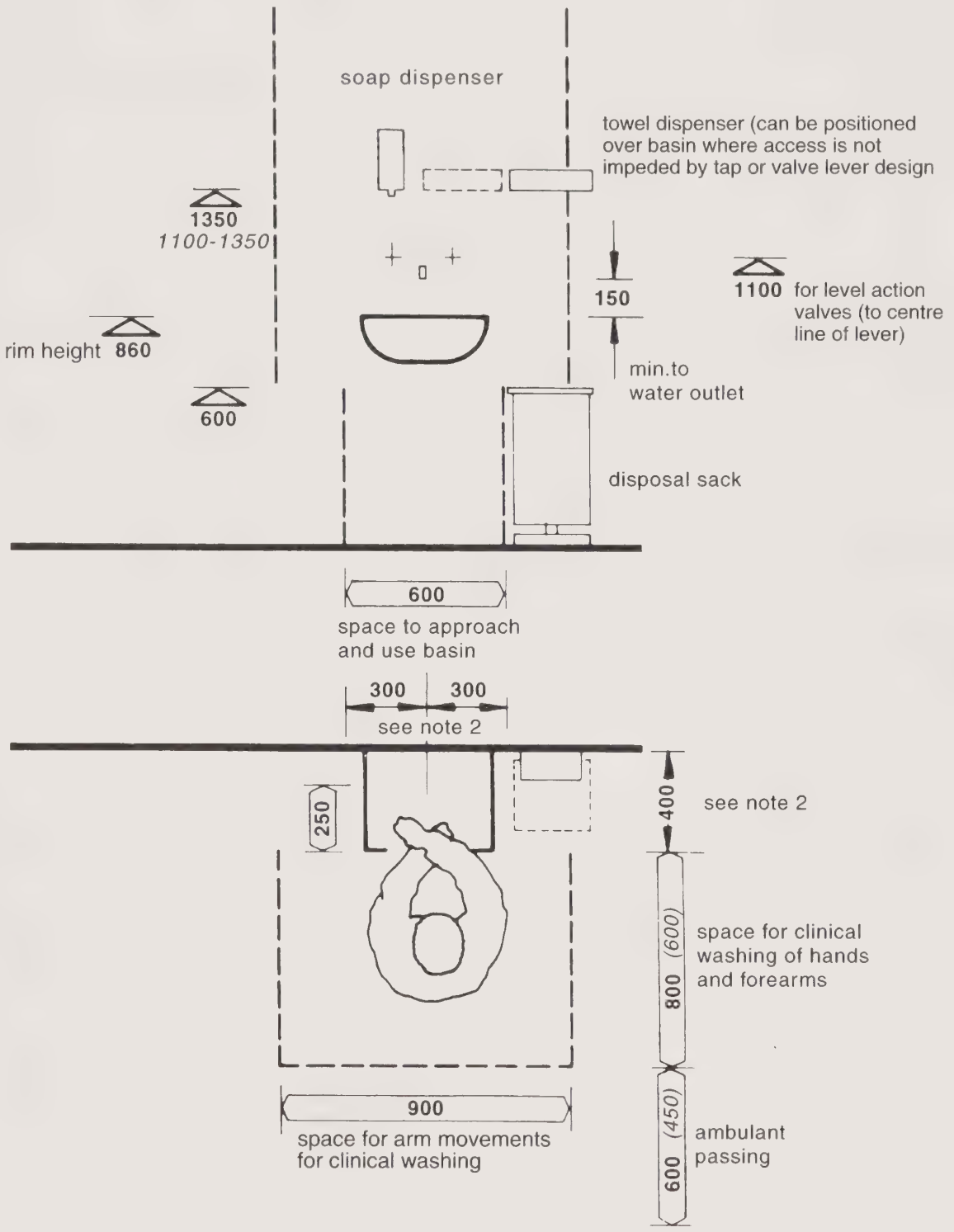
Activities:
Clinical washing of hands and forearms.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Basin 5

Medium

Users:
Staff



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. Recommended dimensions of associated items.

Comfortable forward reach 450, maximum reach 750 (from front edge of basin).

Comfortable sideways reach 750, maximum reach 850 (from centre line of basin).

2. To minimise possible injury to tall users when leaning forward over basin, it is preferable that within this zone the front edge of the basin projects 250 beyond any fitting situated above the basin up to a height of 1800 above floor level.

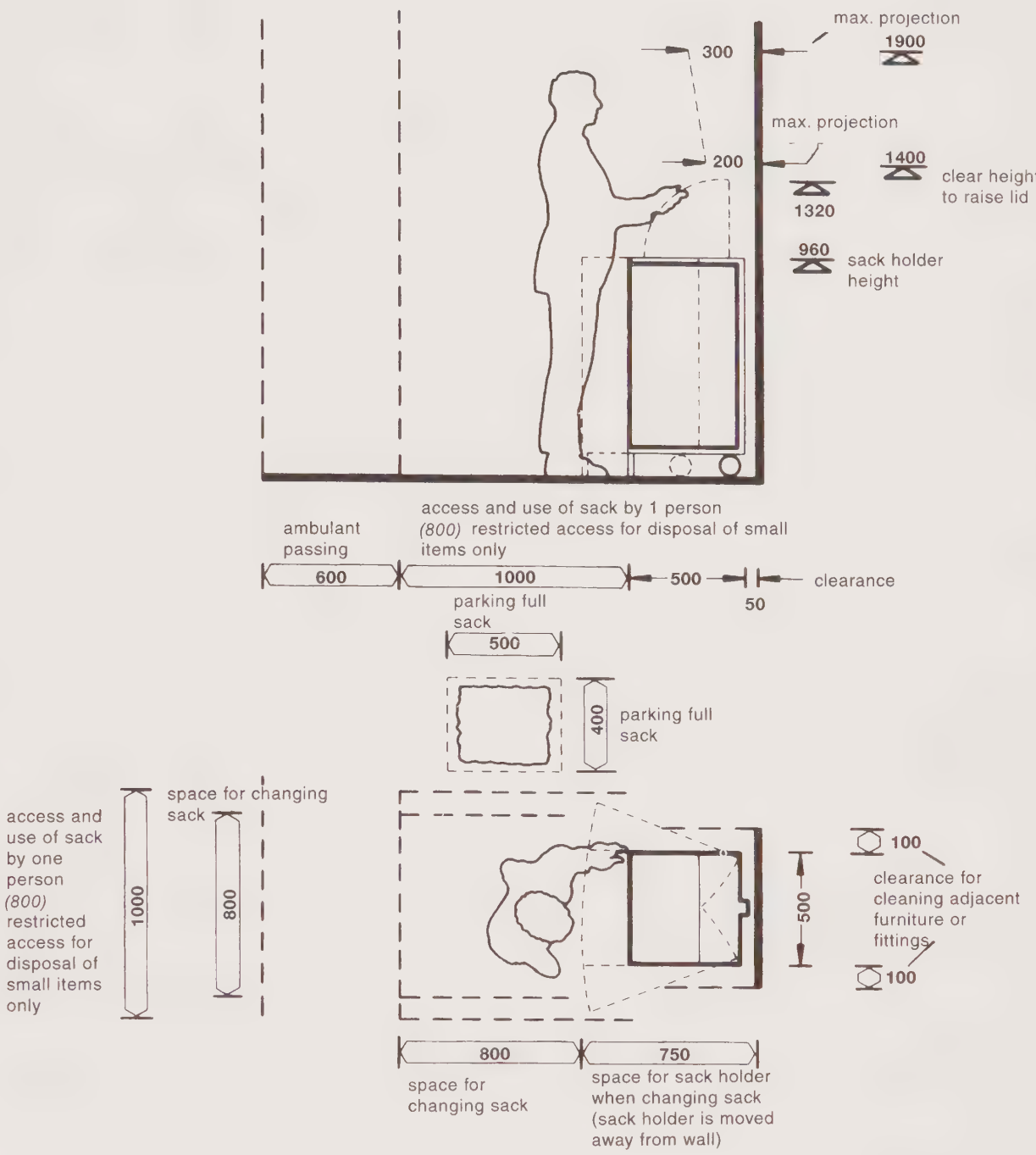
Activities:
Disposal of waste, removal of full sacks, fitting new sacks.

NHS Estates Ergonomic Data Bank
Component-user data sheet, not to scale

Sack Holder 1

Large, mobile

Users:
Staff



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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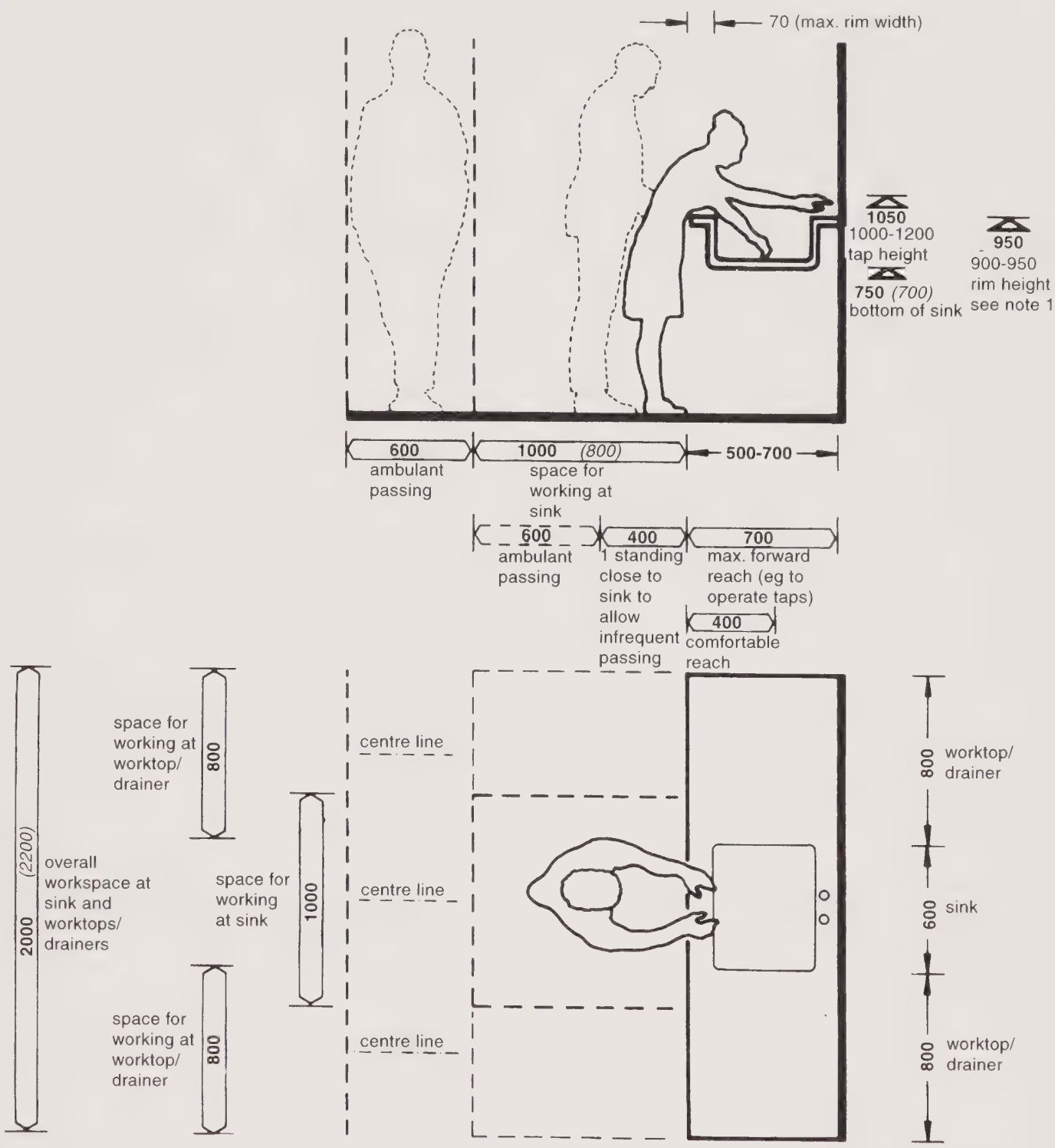
Activities:
General use.

NHSEstates Ergonomic Data Bank
Component-user data sheet, not to scale

Sink 4

Stainless steel, single with draining board(s)

Users:
Fully ambulant adults



Notes:

1350 *(1300)*

Preferred minimum: *(Restricted minimum, not recommended for general use, see explanatory notes)*

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1. The preferred sink rim height for both male and female use is 950. Where it is considered dangerous or unacceptable for the sink rim height to be above the worktop height, both should be at 900, although this will result in taller users having to bend down to use the sink.

2. It is preferable that single sinks should have a worktop or drainer on either side, except where sinks are positioned adjacently when a worktop or drainer should be available either side of each double sink.

Appendix 1

Healthcare premises: checklist of access and facilities for disabled people

Parking

1. Are there parking spaces adjacent to the building(s) to minimise the distances to be travelled?

2. Is the parking space wide enough to allow a car door to open fully to allow unobstructed transfer into a wheelchair, either unassisted or assisted?

3. Is the location of the disabled parking spaces such that the approach route to the building/facility is not obstructed by other parked cars and away from moving traffic?

4. Are kerbs and other changes of level ramped?

5. Is the parking space and access route under cover?

6. Are there adequate signs to identify the reserved parking spaces and the best routes into the premises?

Approach to building

7. Is the approach route smooth, slip resistant (whether wet or dry), free from incidental obstructions or hazards?

8. Are handrails provided on all slopes and resting places provided at intervals where a ramp or approach is long?

9. Are all public entrances to the building/facility accessible?

10. Are access doors wide enough to facilitate wheelchair movement?

11. Are thresholds eliminated or kept to a minimum?

12. Do door characteristics and dimensions of related spaces allow it to be opened (and closed) easily by independent wheelchair users, moving in either direction?

13. What doors can be eliminated?

Internal circulation

14. Are lobby sizes adequate and safe for both independent and assisted wheelchair use?

15. Are corridor and approach routes satisfactory? Do they allow passing and turning and take adequate account of corridor traffic conditions?

16. Have all obstructions and projections from walls (or ceiling) or similar hazards at floor level – such as changes of level – been avoided? If unavoidable are they clearly discernible?

17. Are internal door widths adequate to allow turning through 90° from the corridor or lobby? Should either or both be increased?

18. Have safety handrails been provided on corridors, ramps, steps or at other points where they are required by persons with impaired mobility? Have they been produced where they can be used as location aids by visually impaired people?

19. Are any large areas of glass close to circulation areas marked or framed so as to be clearly discernible to partially sighted people?

20. Are seats available at intervals to permit an ambulant disabled and elderly person to take a short rest when faced with long corridors to negotiate?

Vertical circulation

21. Are staircases safe and optimally comfortable for elderly and disabled people? Are handrail and landing characteristics satisfactory?

22. Are lifts available, conveniently placed, accessible and clearly signed?

23. Are lift controls accessible to the independent wheelchair user? Are the visual and audible signals, alarms and floor designations satisfactory? Are digits embossed and satisfactory for blind or partially sighted persons? Is there a tip-up seat, or a support rail available?

Toilets

24. Are there correctly designed unisex toilets, that is where a husband and wife may enter the cubicle together, available in the public areas of the premises?

25. Are there suitable cubicles for wheelchair users in other male and female toilets in the building?

26. Do cubicles for wheelchair users provide adequate manoeuvring space within, or is turning space provided outside? Is the level of privacy afforded satisfactory?

27. Are there cubicles available with appropriate grabrails for the use of ambulant disabled people?

28. Are the WC and wash-basin arrangements accessible to independent wheelchair users? Are the grabrails, mirrors, towels, door closing bars and other aids placed satisfactorily?

Out-patient and treatment areas

29. Can ambulances discharge patients under cover within close proximity to the entrance? Are waiting areas protected from draughts as patients move in and out through the entrance doors? Can patients using wheelchairs (their own or hospital chairs) whilst waiting for treatment, sit with other patients without obstructing the corridors or circulation area?

30. Can patients in wheelchairs use the reception desk conveniently and privately?

31. Are all consulting and treatment areas fully accessible?

32. Are there changing cubicles suitable for wheelchair users, with room for assistance to be given if required?

33. Are refreshment areas accessible to disabled people?

34. Are clear, well-lit signs posted to ensure easy circulation within the building?

35. Are telephones and other public mechanisms accessible to wheelchair users? Are knobs, dials, switches, handles and other controls operable and within convenient reach?

Ward facilities

36. Do sanitary facilities offer maximum independence and privacy to disabled patients, both those who will be using wheelchairs and those who have walking difficulties?

37. Is the day room accessible, with a variety of seating heights to help ambulant disabled people? Are all notices easy to see and understand?

38. Are window controls, radio and television and call bells easily reached by disabled patients?

39. Can disabled visitors conduct private conversations with their friends in bed or in the ward?

Other features

40. Could disabled employees work in the building – with particular reference to offices, laboratories, canteen, rest-rooms and toilet facilities?

41. Are emergency evacuation routes and emergency exits satisfactory?

42. Are fire alarms readily accessible to the semi-ambulant and wheelchair disabled? Are emergency call facilities installed to summon assistance to remote locations?

43. Are audiovisual alarm signals provided?

Appendix 2 – References

Acts and Regulations

Consumer Protection Act 1987. HMSO, 1987.

Chronically Sick and Disabled Persons Act 1970. HMSO, 1970.

Chronically Sick and Disabled Persons (Amendment) Act 1976. HMSO, 1976.

Chronically Sick and Disabled Persons (Scotland) Act 1972. HMSO, 1972.

Chronically Sick and Disabled Persons (Northern Ireland) Act. HMSO, 1978,

Disabled Persons Act 1981. HMSO, 1981.

Disabled Persons (Services, Consultation and Representation) Act 1986. HMSO, 1986.

Disabled Persons (Northern Ireland) Act. HMSO, 1989.

Health and Safety at Work etc Act 1974. HMSO, 1974.

SI 2768: 1991 The Building Regulations. HMSO.

SI 1180: 1992 The Building Regulations (Amendment) Regulations. HMSO.

SI 2179: 1990 (S 187) The Building Standards (Scotland) Regulations. HMSO, 1990.

SI 1039: 1978 (NI 9) Health and Safety at Work (Northern Ireland) Order. HMSO, 1978.

Building Regulations publications

The Building Regulations 1991: Approved Document M: access and facilities for disabled people. Department of the Environment, HMSO, 1992.

The Building Regulations (Northern Ireland) 1990 – Part R: Facilities for disabled people. Department of the Environment for Northern Ireland, HMSO, 1994.

The Building Regulations (Northern Ireland) 1990 – Technical booklet R: Access and facilities for disabled people. Department of the Environment for Northern Ireland, HMSO, 1994.

The Building Standards (Scotland) Regulations 1990: Technical standards part T: facilities for disabled people. Scottish Office Building Directorate, HMSO, 1990.

NHS Estates, NHS Executive and Scottish Office publications

Capital Investment Manual:

Overview. NHS Executive, HMSO, 1994.

Project organisation. NHS Executive, HMSO, 1994.

Private finance guide. NHS Executive, HMSO, 1994.

Business case guide. NHS Executive, HMSO, 1994.

Management of construction projects. NHS Executive, HMSO, 1994.

Commissioning of a health care facility. NHS Executive, HMSO, 1994.

IM&T Guidance. NHS Executive, HMSO, 1994.

Post project evaluation. NHS Executive, HMSO, 1994.

Health Facilities Note 05 – Design against crime: a strategic approach to hospital planning. NHS Estates, HMSO, 1994.

Quarterly Briefing: Health building economics. NHS Estates, issued quarterly.

Works Guidance Index. NHS Estates, published annually.

Health Building Notes (HBNs)

HBN 45 – External works for health buildings. NHS Estates, HMSO, 1992.

Health Technical Memoranda (HTMs)

HTM 55 – Building components: Windows. NHS Estates, HMSO, 1989.

HTM 56 – Building components: Partitions. NHS Estates, HMSO, 1989.

HTM 57 – Building components: Internal glazing. NHS Estates, HMSO, 1989.

HTM 58 – Building components: Internal doorsets. NHS Estates, HMSO, 1989.

HTM 59 – Building components: Ironmongery. NHS Estates, HMSO, 1989.

HTM 60 – Building components: Ceilings. NHS Estates, HMSO, 1989.

HTM 61 – Building components: Flooring. NHS Estates, HMSO, 1989.

HTM 62 – Building components: Demountable storage systems. NHS Estates, HMSO, 1989.

HTM 65 – Building components: Health signs. NHS Estates, HMSO 1995.

Firecode

Firecode: policy and principles. NHS Estates, HMSO, 1994.

Firecode: directory of fire documents. Department of Health, HMSO, 1987.

Firecode in Scotland: policy and principles. Scottish Office Home and Health Department, HMSO, 1994.

Fire safety: new health buildings in Scotland. Scottish Home and Health Department, HMSO, 1987.

The Guide to means of escape and related safety measures in existing houses in multiple occupation in Scotland. Scottish Home and Health Department, HMSO, 1988.

HTM 81 – Fire precautions in new hospitals. DHSS, HMSO, 1987.

HTM 81 Supplement 1 – Fire precautions in new hospitals. NHS Estates, HMSO, 1993.

HTM 82 – Firecode: alarm and detection systems. NHS Estates, HMSO, 1989.

HTM 83 – Fire safety in healthcare premises: general fire precautions. NHS Estates, HMSO, 1994.

HTM 85 – Fire precautions in existing hospitals. NHS Estates, HMSO, 1994.

HTM 86 – Fire risk assessment in hospitals. NHS Estates, HMSO, 1994.

HTM 87 – Firecode: textiles and furniture. NHS Estates, HMSO, 1993.

HTM 88 – Fire safety in health care premises. DHSS, HMSO, 1986. (new version in preparation)

Fire Practice Note 1 – Laundries. Department of Health, HMSO, 1987.

Fire Practice Note 2 – Storage of flammable liquids. Department of Health, HMSO, 1987.

Fire Practice Note 3 – Escape bed lifts. Department of Health, HMSO, 1987.

Fire Practice Note 4 – Hospital main kitchens. NHS Estates, HMSO, 1994.

Fire Practice Note 5 – Commercial enterprises on hospital premises. NHS Estates, HMSO, 1992.

Fire Practice Note 6 – Arson prevention and control in NHS healthcare premises. NHS Estates, HMSO, 1994.

Department of Health and Welsh Office publications

Ergonomic study to validate some of the key spaces in the new nucleus adult acute ward (Nucleus Study no. 30). Department of Health, 1990.

Towards smoke-free NHS premises (HSG(92)41). Department of Health, 1992.

Health services management – security (HSG(92)22). Department of Health, 1992.

The NHS Security manual (WHC(92)46). Welsh Office, 1992.

The NHS and Community Care Act 1990: removal of Crown immunities (WHC(91)4). Welsh Office, 1991.

The NHS and Community Care Act 1990: removal of Crown immunities (HN(90)27). Department of Health, 1990.

Consultant contracts and job plans (WHC(89)20). Welsh Office, 1989.

Health building and estate management: building legislation compliance procedures (HC(88)60). DHSS, 1988.

Fire precautions in NHS premises: Firecode (WHC(88)6). Welsh Office, 1988.

Fire precautions in NHS premises: Firecode (HC(87)24). Department of Health, 1987.

Upgrading and adaptation of existing buildings – revision of DS 183/74 (WKO(81)4). DHSS, 1981.

Damage in hospitals: need to buffer movable equipment (DS(Supply)42/75). DHSS, 1975.

Scottish Office Circulars

Scottish Office – health building procurement in Scotland: procedures prior to approval in principle (SHHD/DGM(87)13). Scottish Home and Health Department, 1987.

Scottish Office – health building procurement in Scotland: principles of cost control (SHHD/DS(85)58). Scottish Home and Health Department, 1985.

Health building procurement in Scotland: procurement procedures for health buildings (SHHD/DGM(91)38). Scottish Home and Health Department, 1985.

Health building procurement in Scotland: procedures subsequent to approval in principle. Scottish Home and Health Department, 1992.

Miscellaneous publications

BS 5415 Safety of electrical motor-operated industrial and commercial cleaning appliances. British Standards Institution.

BS 5810: 1979 Code of practice for access for the disabled to buildings. (under review) British Standards Institution.

NHS Security Manual. National Association of Health Authorities and Trusts (NAHAT), 1992.

Appendix 3

Further reading

Foley, Conor, and Pratt, Sue. **Access denied: human rights and disabled people.** National Council for Civil Liberties, 1994.

George, Mike. **Grabbing some attention.** *Community Care,* 1994, Jan 20, no 1000, pp 14–15.

Ratoff, Len, Heyes, Janet, and Haddleton, Maxine. **Does you don't have access?** *Health Service Journal,* 1993, Apr 29, vol 103, no 5350, pp 32–34.

Jellicoe, Lynne. **Access all areas.** *Health Service Journal,* 1993, Jul 15, vol 103, no 5361, p 31.

Parker, Gillian, and Beales, David. **Provision to reflect real needs. Meeting the needs of disabled people in general practice.** *Professional Nurse,* 1993, Sep, vol 8, no 12, pp 820–822, 824, 825.

Braddock, Andrew, and Selling, Neil. **Risking access?** *Access by Design,* 1993, Sep/Dec, no 62, pp 12–14.

Penton, John. **Access to housing.** *Architects Journal,* 1993, Jan 20, vol 197, no 3, p 43.

Thorpe, Stephen. **Coggeshall, Essex.** *Access by Design,* 1993, Jan/April, no 60, pp 6–9.

Harrowell, Chris, and Peace, Su. **Fire escape strategies for disabled people.** *Access by Design,* 1993, Jan/Apr, no 60, pp 17–21.

Lappin, Nicky. **Coming clean on bathrooms.** *Access by Design,* 1993, Sep/Dec, no 62, pp 10–11.

Thorpe, Stephen, and Alderson, Ann. **Access to existing buildings.** *Access by Design,* 1992, May/Aug, no 58, p 18.

Millington, David. **Automatic access.** *Building,* 1992, Oct 30, vol 257, no 7768, supplement, pp 27, 28.

Tate, John, and O'Farrell, Neil. **Access developments in doctors' surgeries.** *Access by Design,* 1992, Sep/Dec, no 59, pp 16, 17.

Doughty, Richard. **Surgery design goes according to open-plan.** *Medeconomics,* 1992, Apr, vol 13, no 4, pp 58–60, 62.

Vujakovic, Peter. **Mapping another world.** *Access by Design,* 1992, Jan/Apr, no 57, pp 14–16.

Council on Tall Buildings and Urban Habitat. **Building design for handicapped and aged persons.** McGraw-Hill, 1992.

Cooke, G.M.E. **Assisted means of escape of disabled people from fires in tall buildings (BRE information paper; IP 16/91).** Building Research Establishment, 1991.

Cornelissen, Gerard J. J. **European perspectives.** *Contact,* 1991, Spring, no 67, pp 17,19, 20.

Walsh, C. J. **A step backwards for barrier-free design?** *Access by Design,* 1990, Jan/Apr, no 51, pp 6–9.

Planning for a brighter Wandsworth: access to buildings and spaces for people with disabilities. Wandsworth Borough Planner's Service, 1989.

Facilities for the disabled: a PSA building design guide. Property Services Agency. Directorate of Architectural Services, Building Research Establishment, 1989.

Appendix 4

Activity Data

1. "Activity data" is an information system developed to help project and design teams by defining the users' needs more precisely. This information constitutes the computerised Activity DataBase, which is updated twice yearly. It comprises three types of information sheet: activity space data sheets (known as A-Sheets), their supporting activity unit data sheets (known as B-Sheets) and A-Sheet component listings (known as D-Sheets).

2. A-Sheets record in more detail than is described in this Note each task or activity that is performed in a particular activity space (which may be a room, space, corridor or bay), together with environmental conditions and the technical data necessary to enable the activities to be performed. Each A-Sheet also contains a list of the titles and code numbers of the relevant B-Sheets.

3. B-Sheets provide narrative text and graphics to scale relating to one activity. They show equipment fitted or supplies as part of the building, also the necessary engineering terminals.

4. D-Sheets provide information about the total quantities of components (excluding those in Group 4 – see paragraph 1.12) extracted from all B-Sheets selected for inclusion in an individual A-Sheet.

5. Activity data is only available in the form of magnetic media, but this may be used to generate paper copies where required.

6. Further information about the use and preparation of activity data can be obtained from NHS Estates, Department of Health, 1 Trevelyan Square, Boar Lane, Leeds LS1 6AE.

Activity data applicable to this Note

7. The A-Sheets recommended for the activity spaces described in this Note are either new sheets, amended ones or selected from existing sheets. A list of A-Sheet code numbers and titles is given at the end of this chapter.

8. Further activity data sheets may be selected, or drawn up by project teams to their own requirements, for any services not described in the Note or included in the list.

9. In order to ensure consistent and economic provision, variations from the A-Sheets recommended for the spaces covered in this Note should be considered only where it has been decided that the function of a space will differ substantially from that described.

Lists of activity data A-Sheets

10. The activity data A-Sheets listed below may not carry a title identical to the activity spaces detailed in this Note. Use of the appropriate A-Sheet code number will, however, result in the correct activity space being accessed.

11. The activity data A-Sheets are listed below in the same order as the spaces to which they relate are listed in the Schedule of Accommodation.

Note The foregoing applies to the MS.DOS application only.

During the currency of this Note a MS.Windows application is being introduced with the following consequences:

A-Sheets are replaced by room data sheets.

B-Sheets are replaced by assemblies.

The term 'D-Sheets' is omitted from component listings.

Activity space	A-sheet code
WC/Rinse basin: fully ambulant users	V1007
WC/Rinse basin: ambulant, semi and assisted ambulant, frontal access	V1101
WC/Rinse basin: ambulant, semi and assisted ambulant, lateral access	V1102
WC/Rinse basin: independent wheelchair users, 'Specimen' WC	V0906
WC/Rinse basin: independent and assisted wheelchair users	V0904
WC/Rinse basin: assisted wheelchair users, dual access	V1214
WC/Bidet/Wash basin: independent semi, and assisted ambulant users	V1209
Bathroom/WC/Wash	V1709
Bathroom/WC/Wash: treatment, assisted patient, use of hoist	V1714
Shower wash: ambulant, semi-ambulant users	V1606
Shower/WC/Wash: assisted patient wheelchair users	V1608
Shower/WC/Wash: assisted patient wheelchair users	V1612
Shower/WC/Bidet/Wash	V1620

Appendix 5

Index of Ergonomic Data Sheets in other volumes of HBN 40

Volume 1 – Public areas

Ambulant people
Person 1, walking – circulating and passing
Person 2, walking with assistance
Person 3, with walking sticks or tripods
Person 4, with crutch or crutches
Person 5, with walking frame

Wheelchairs
Wheelchair 1, straight movement
Wheelchair 2, turning 90°
Wheelchair 3, turning 90° and 180°
Wheelchair 4, reach
Wheelchair 5, dimensions and eye levels

Building approach
Car parking 1, easy access
Car parking 2, wheelchair access
Dropped kerb
Ramp
External steps

Doors and lobbies
Door 1, single-leaf, flush
Door 2, door handles and vision panels
Door 3, ironmongery
Lobby 1, single-leaf doors
Lobby 2, double-leaf doors
Lobby 3, automatic sliding doors

Circulation and orientation
Signposting 1, eye levels/focal distances
Signposting 2, viewing distances/height
Signposting 3, viewing distances/width
Internal stairs
Corridors
Handrail
Grabrail

Toilets
Toilet 2, ambulant, semi- and assisted ambulant – frontal access
Toilet 3, ambulant, semi- and assisted ambulant – lateral access
Toilet 4, independent wheelchair users, with basin
Toilet 5, independent and assisted wheelchair users, with basin
Toilet 6, dual assisted wheelchair users, with basin
Toilet 7, wc with bidet and basin

Waiting/refreshment areas
Chair 1, upright
Chair 2, high-seat easy chair
Table 1, dining, general – ambulant users
Table 2, dining, general – wheelchair users
Table 3, dining, square – ambulant users
Table 4, dining, square – wheelchair users
Table 5, dining, rectangular – wheelchair users
Table 6, dining, rectangular – ambulant users
Table 7, dining, square – ambulant users
Table 8, dining, round – ambulant users

Components
Basin 1, handrinse
Basin 2, medium, (personal washing)
Basin 3, handrinse (wheelchair users)
Basin 4, medium (wheelchair users)
Taps 1, basin
Taps 2, basin
Taps 3, basin
Telephone
Mirror 1, wheelchair users
Mirror 2, grooming, head and shoulders
Mirror 3, grooming and dressing, whole body
Windows 1, standing and seated users
Windows 2, wheelchair users and patients in bed

Volume 2 – Treatment areas

Consulting/examination – General
Consulting/examination 1
Consulting/examination 2
Consulting/interview
Examination room 1
Treatment room 1

Bed/cot care
Bed 1, various
Bed 2, divan
Single bedroom 1
Single bedroom 2
Single bedroom 3
Single bedroom 4 or double (for the elderly)
Twin bedroom 1 (for the elderly)
Bed space
4 Bed space
6 Bed Space

Patient hoists
Patient Hoist 1, mobile chair (wide or narrow base) turning 90°
Patient hoist 2, mobile chair turning 90° & 180°
Patient hoist 3, mobile chair (wide or narrow base) to and from bathroom

Patient hoist 4, with chair attachment, drying and dressing patient
Patient hoist 5, mobile chair hoist, manoeuvring into and out of bath

Toilets
Toilet 2, ambulant, semi- and assisted ambulant – frontal access
Toilet 3, ambulant, semi- and assisted ambulant – lateral access
Toilet 4, independent wheelchair users, with basin
Toilet 5, independent and assisted wheelchair users, with basin
Toilet 6, dual assisted wheelchair users, with basin
Toilet 7, WC with bidet and basin

Bathrooms
Bathroom 1, ambulant, assisted ambulant and independent wheelchair patients; WC and personal washing facility
Bathroom 2, assisted patients; use of hoist, WC and personal washing facility

Showers
Shower 1, partially capable users with assistance and wheelchair users; with WC and wash basin – linear layout
Shower 2, partially capable users with assistance and wheelchair users; with WC and wash basin – non-linear layout

Components
Desk 1, Doctor's, with drawers on one side
Chair 3, upright; sitting, assisted and independent changing
Person 8, dressing/undressing
Low Partition, bed-space privacy screen
Switches and sockets, wall-mounted
Door Screen 1, single door, 1000 & 900 doorsets
Door Screen 2, 1500 doorsets
Bidet, ambulant or semi-ambulant patients
Bath 1, wheelchair access
Basin 1, handrinse
Basin 2, medium; personal washing
Basin 3, handrinse (wheelchair users)
Basin 4, medium (wheelchair users)
Basin 5, medium; clinical washing (staff users)
Taps 1, basin
Taps 2, basin
Taps 3, basin
Wardrobe 1, clothes storage (wheelchair users)
Shelving 3, open 200 deep (wheelchair users)
Worktop Bench 3 (independent or assisted wheelchair users)
Cupboard 3, wall-mounted (wheelchair users)
Drawers 1, independent and wheelchair users
Sink 1 (wheelchair users)
Sink 2, laundry (wheelchair users), lateral approach
Sink 3, laundry (wheelchair users), frontal approach
Sink 4, stainless steel, single with draining-board (general use)
Ironing board 1 (partially capable, standing or seated users)
Ironing board 2 (assisted and independent wheelchair users)
Oven 1, small
Cooking hob 1, small
Refrigerator 1
Washing-machine 1, front-loading
Planting bed 1 (partially capable users)
Planting bed 2 (wheelchair users)
Planting bed 3 (wheelchair users)

Volume 4 – Circulation areas

Ambulant people
Person 1, walking – circulating and passing
Person 2, walking, with assistance
Person 3, with walking sticks or tripods, and assistance
Person 4, with crutch or crutches, and assistance
Person 5, with walking frame

Wheelchairs
Wheelchair 1, straight movement
Wheelchair 2, around corner
Wheelchair 3, turning
Wheelchair 6, parking end to end
Wheelchair 7, parking side by side
Corridor – ambulant and wheelchair users: circulating and parking

Patient trolleys
Patient trolley 1, straight movement
Patient trolley 2, around corner
Patient trolley 3, through 1500 doorset
Patient trolley 4, through 1900 doorset

Beds
Bed 1, adjustable or fixed-height bed sizes
Bed 2, straight movement, with or without attendants
Bed 3, through 1500 doorset
Bed 4, through 1900 doorset
Bed 5, turning 90° corner
Bed 6, turning through 180° corner

Lobbies
Lobby 1, single-leaf doors
Lobby 2, double-leaf doors
Lobby 3, automatic sliding doors

Lifts and stairs
Lift and controls – passenger, 1600 x 1400
Lift – multi-purpose stretcher/trolley, 1400 x 2400
Lift – bed, 1800 x 2700
Internal stairs
Staircase, mattress evacuation 1: straight flight – corridors
Staircase, mattress evacuation 2: landings and stairs

Trolleys/mobile equipment (large)
Trolley/mobile equipment 1 – types
Trolley/mobile equipment 2 – types
Trolley/mobile equipment 3, straight movement
Trolley/mobile equipment 4, around corner
Trolley/mobile equipment 5, through doors (1000 or 1200)
Trolley/mobile equipment 6, though doors (1400 or 1800)

Trolley/mobile equipment 7, turning
Trolley/mobile equipment 8, parking at 90° to wall
Trolley/mobile equipment 9, parking parallel to wall
Platform truck 1, straight movement
Platform truck 2, around corner and through doorway
Platform truck 3, turning
Pallet truck 1, straight movement
Pallet truck 2, around corner and through doorway
Pallet truck 3, turning
Pallet truck 4, parking
Sack truck 1, tilting, and straight movement
Sack truck 2, around corner
Sack truck 3, through doorway
Sack truck 4, turning

Tugs and trains
Tug 1, basic dimensions; straight movement
Tug 2, turning
Tug 3, charging bay
Tug and train 1, straight movement
Tug and train 2, around corner, chamfer A
Tug and train 3, around corner, chamfer B
Tug and train 4, turning into an opening
Tug and train 5, turning
Tug and train 6, ramps
Tug and train 7, lay-by

Service ducts
Service duct 1, horizontal crawlway – access hatch
Service duct 2, horizontal crawlway – through route
Service duct 3, vertical shaft with ladder
Service duct 4, step ladder
Service duct 5, horizontal (floor/ceiling) hatch
Service duct 6, catwalk
Service duct 7, horizontal walkway with or without services
Service duct 8, horizontal crawlway with services

Other publications in this series

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1 Buildings for the Health Service, 1988. HMSO
2 The whole hospital, 1992. HMSO
3 –
4 Adult acute ward, 1990, HMSO
5 –
6 Radiology department, 1992. HMSO
6 Supp 1 Ethylene oxide sterilization section, 1994. HMSO
7 –
8 Rehabilitation: accommodation for physiotherapy, occupational therapy and speech therapy, 1991. HMSO
9 –
10 Catering department, 1986. HMSO*
11 –
12 Out-patients department, 1986. HMSO*
12 Supp 1 Genito-urinary medicine clinic. 1991. HMSO*
12 Supp 2 Oral surgery, orthodontics, restorative dentistry, 1992. HMSO
12 Supp 3 Ear, nose, throat (in preparation)
13 Sterile services department, 1993. HMSO
13 Supp 1 Ethylene oxide sterilization section, 1994. HMSO
14 –
15 Accommodation for pathology services, 1991. HMSO
16 –
17 –
18 Office accommodation in health buildings, 1991. HMSO
19 –
20 Mortuary and post-mortem room, 1991. HMSO
21 Maternity department, 1989. HMSO*
22 Accident and emergency department, 1995. HMSO
23 Comprehensive children's department, 1994. HMSO*
24 –
25 Laundry, 1994. HMSO
26 Operative department, 1991. HMSO
27 Intensive therapy unit, 1992. HMSO
28 –
29 Accommodation for pharmaceutical services, 1988. HMSO*
30 –
31 –
32 –
33 Rehabilitation centres for psychiatric patients, 1966. HMSO
34 Estate maintenance and works operations, 1992. HMSO
35 Accommodation for people with acute mental illness, 1988. HMSO*
36 Local healthcare facilities, 1995. HMSO
37 Hospital accommodation for elderly people, 1981. HMSO
38 –
39 Ophthalmic clinic, 1982. HMSO
40 Common activity spaces
Vol 1 – Public areas, 1995. HMSO
Vol 2 – Treatment areas, 1995. HMSO
Vol 4 – Circulation areas, 1995. HMSO
41 Accommodation for staff changing and storage of uniforms, 1984. HMSO*
42 Accommodation for education and training, 1989. HMSO*
43 –
44 Accommodation for ambulance services. 1994. HMSO
45 External works for health buildings, 1992. HMSO
46 General medical practice premises, 1991. HMSO
47 Health records department, 1991. HMSO
48 Telephone services, 1989. HMSO*
49 –
50 –
51 Main entrance, 1991. HMSO
51 Supp 1 Miscellaneous spaces in a District General Hospital, 1991. HMSO
52 Accommodation for day care
Vol 1 – Day surgery unit, 1993. HMSO
Vol 2 – Endoscopy unit, 1994. HMSO
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